S. HRG.100-1063

THE GENERAL AVIATION AND ACCIDENT LIABILITY STANDARDS ACT OF 1988

HEARING

BEFORE THE

SUBCOMMITTEE ON
COURTS AND ADMINISTRATIVE PRACTICE

OF THE

COMMITTEE ON THE JUDICIARY
UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

SECOND SESSION

ON

S. 473

A BILL TO REGULATE INTERSTATE COMMERCE BY PROVIDING FOR UNIFORM STANDARDS OF LIABILITY FOR HARM ARISING OUT OF GENERAL AVIATION ACCIDENTS

JUNE 21, 1988

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THE GENERAL AVIATION AND ACCIDENT LIABILITY STANDARDS ACT OF 1988

TUESDAY, JUNE 21, 1988

U.S. SENATE,
SUBCOMMITTEE ON COURTS AND ADMINISTRATIVE PRACTICE,
COMMITTEE ON THE JUDICIARY,
Washington, DC.

The committee met, pursuant to notice, at 9:39 a.m., in room SD–226, Dirksen Senate Office Building, Hon. Howell Heflin (chairman of the subcommittee) presiding.

Also present: Senators Thurmond, Metzenbaum, and Specter.

OPENING STATEMENT OF HON. HOWELL HEFLIN, A U.S. SENATOR FROM THE STATE OF ALABAMA

Senator HEFLIN. Today, the subcommittee will hear testimony on Senate bill 473, the General Aviation and Accident Liability Standards Act of 1988. This bill was reported by the Commerce Committee on April 26th and was sequentially referred to the Committee on the Judiciary, and subsequently referred to this subcommittee.

This legislation would provide a Federal standard for liability for injuries arising out of general aviation accidents and would preempt State laws on any matters addressed by this legislation.

In addition, it would confer original jurisdiction in the district courts of the United States and provide for the removal to Federal courts of actions brought in the State courts.

The proponents of this legislation argue that the high cost of products liability exposure is pricing the general aircraft industry out of business. Opponents argue that there are other plausible explanations for the decline in the general aviation industry and that restructuring the tort system is not the answer.

Because this legislation was an impact on the Federal courts and the State courts, it is the responsibility of the Judiciary Committee to understand the justification for this bill.

I have said many times that a Federal cure usually turns out to be a Federal plague, and I have traditionally supported changes in product liability laws at the State level. But other Members of Congress and the industry believe that the general aviation industry is somewhat unique and a Federal standard of liability is necessary.

We have a statement from Senator Grassley which will be entered into the record at this point.

[The prepared statement of Senator Grassley and a copy of S. 473 follow:]

PREPARED STATEMENT OF HON. CHARLES E. GRASSLEY, A U.S. SENATOR FROM THE STATE OF IOWA

Mr. Chairman, I thank you for moving quickly on S. 473, the General Aviation Accident Liability Standards Act. I understand that our referral jurisdiction expires on June 30, so time is short.

The bill has been favorably—and overwhelmingly—approved by the Commerce Committee. Of course, I recognize that any product liability proposal is destined to attract controversy in the Senate, but this bill may be one that can be distinguished from the rest.

The bipartisan nature of the cosponsors suggests that this may be a reasonable and modest approach to a serious problem facing general aviation.

I look forward to the testimony on this bill. I'm quite sympathetic to the concerns raised by the consumers of general aviation, and hope to be able to support any reasonable final product.

II

Calendar No. 777

100TH CONGRESS
2D SESSION

S. 473

[Report No. 100–378]

To regulate interstate commerce by providing for uniform standards of liability for harm arising out of general aviation accidents.

IN THE SENATE OF THE UNITED STATES

FEBRUARY 4, 1987

Mrs. KASSEBAUM (for herself, Mr. DOLE, Mr. DANFORTH, Mr. INOUYE, Mr. EXON, Mr. FORD, Mr. KASTEN, Mr. WALLOP, Mr. PRESSLER, Mr. SPECTER, Mr. RUDMAN, Mr. GARN, Mr. HEINZ, Mr. PELL, Mr. ZORINSKY, Mr. MURKOWSKI, Mr. SIMPSON, Mr. MCCAIN, Mr. BOSCHWITZ, Mr. KARNES, Mr. SYMMS, Mr. HATCH, Mr. KERRY, and Mr. HUMPHREY) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

JUNE 2, 1988

Reported, under authority of the order of the Senate of May 27 (legislative day, May 18), 1988, by Mr. HOLLINGS, with amendments

[Omit the part struck through and insert the part printed in italic]

JUNE 6 (legislative day, MAY 18), 1988

Referred to the Committee on the Judiciary with instructions to report by June 30, 1988, or be discharged

JUNE 29, 1988

Committee discharged; placed on the calendar

A BILL

To regulate interstate commerce by providing for uniform standards of liability for harm arising out of general aviation accidents.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "General Aviation Accident Liability Standards Act of ~~1987~~ *1988*".

FINDINGS AND PURPOSE

SEC. 2. (a) The Congress finds that—

(1) transportation by air of passengers continues to comprise an increasingly important component of the Nation's overall transportation system;

(2) although the incidence of injuries to passengers in general aviation accidents has decreased, the number of general aviation accident liability claims against general aviation aircraft manufacturers and the amount of damages sought in such claims is increasing at disproportionate rates, beyond any relationship to the quality of the aircraft manufactured and in use;

(3) the current system for determining liability and damages for compensating individuals injured in general aviation accidents is inadequate;

(4) competent general aviation manufacturers and component part manufacturers are ceasing or limiting production of general aviation aircraft or some models

of such aircraft because of the increasing costs and unavailability of product liability insurance;

(5) the increase in the number of liability claims and the size of awards and settlements, and the excessive time and expense devoted to the resolution of such claims, impose a substantial economic burden on general aviation manufacturers and their dealers;

(6) the Federal Government has an interest in the general aviation accident liability system because the Federal Government has established a comprehensive system for regulating general aviation, including—

(A) establishing standards for design, construction, and certification of general aviation aircraft,

(B) establishing standards for maintenance of aircraft, licensing of repair facilities, and licensing of persons who may perform or approve maintenance, repairs, and inspections,

(C) establishing standards for training and licensing of pilots,

(D) establishing a comprehensive air control system,

(E) conducting investigations to determine the probable cause of aviation accidents and prevent future accidents, and

(F) conducting other activities necessary to assure a safe air transportation system;

and this Federal system is the exclusive legal authority for regulating aviation operations and safety;

(7) it is in the national interest to reduce unnecessary expenditures related to general aviation accident liability claims while providing more rapid and more efficient compensation for individuals harmed in general aviation accidents; and

(8) Federal action to reform the general aviation accident liability system will result in—

(A) the maintenance of airworthy general aviation aircraft; and

(B) a more rational general aviation accident liability system.

(b) It is the purpose of this Act to establish standards for determining liability for harm arising out of general aviation accidents.

DEFINITIONS

SEC. 3. As used in this Act, the term—

(1) "Administrator" means the Administrator of the Federal Aviation Administration;

(2) "claimant" means any person who brings a general aviation accident liability action subject to this Act, and any person on whose behalf such an action is brought, including—

(A) the claimant's decedent; and

(B) the claimant's parent or guardian, if the action is brought through or on behalf of a minor or incompetent;

(3) "general aviation accident" means any accident which arises out of the operation of any general aviation aircraft and which results in harm;

(4) "general aviation aircraft" means any aircraft for which a type certificate or an airworthiness certificate has been issued by the Administrator under the Federal Aviation Act of 1958 (49 App. U.S.C. 1301 et seq.) which, at the time such certificate was originally issued, had a maximum seating capacity of fewer than twenty passengers, and which is not, at the time of the accident, engaged in scheduled passenger carrying operations as defined in regulations issued under the Federal Aviation Act of 1958 (49 App. U.S.C. 1301 et seq.);

(5) "general aviation manufacturer" means—

(A) the builder or manufacturer of the airframe of a general aviation aircraft;

(B) the manufacturer of the engine of a general aviation aircraft; and

(C) the manufacturer of any system, component, subassembly, or other part of a general aviation aircraft;

(6) "harm" means—

(A) property damage or bodily injury sustained by a person;

(B) death resulting from such bodily injury;

(C) pain and suffering which is caused by such bodily injury; and

(D) emotional harm (including bereavement and loss of affection, care, or society) which is caused by such bodily injury;

(7) "product" means a general aviation aircraft and any system, component, subassembly, or other part of a general aviation aircraft; and

(8) "property damage" means physical injury to tangible property, including loss of use of tangible property.

~~PREEMPTION.~~ *PREEMPTION;* APPLICABILITY

SEC. 4. (a) This Act supersedes any State law regarding recovery, under any legal theory, for harm arising out of a general aviation accident, to the extent that this Act establishes a rule of law or procedure applicable to the claim.

(b) Nothing in this Act shall be construed to supersede or to waive or affect any defense of sovereign immunity asserted by the United States or any State.

(c) Nothing in this Act shall be construed to affect the liability of a manufacturer, owner, or operator of any aircraft that is not a general aviation aircraft, or a person who repairs, maintains, or provides any other support for any aircraft that is not a general aviation aircraft, for damages for harm arising out of the operation of an aircraft that is not a general aviation aircraft.

(d) No right of action for harm exists under this Act if that right would be inconsistent with the provisions of any applicable workers' compensation law.

(e) The provisions of this Act shall apply only to—

(1) any manufacturer, owner, or operator of any general aviation aircraft, and any person who repairs, maintains, or provides any other support for such an aircraft;

(2) any occupant of a general aviation aircraft at the time of a general aviation accident, and any person who brings an action for harm caused by such accident on behalf of such occupant; and

(3) any nonoccupant of a general aviation aircraft at the time of a general aviation accident, only if such nonoccupant is bringing an action for harm caused by such accident which arises out of the harm to an occupant of such aircraft at the time of such accident.

UNIFORM STANDARDS OF LIABILITY FOR GENERAL AVIATION ACCIDENTS

SEC. 5. (a) Any person claiming damages for harm arising out of a general aviation accident may bring an action against a party and may recover damages from such party, if such party was negligent and such negligence is a proximate cause of the claimant's harm.

(b)(1) Any person claiming damages for harm arising out of a general aviation accident may bring an action against a general aviation manufacturer of a product and may recover damages from such general aviation manufacturer if—

(A) the product, when it left the control of the manufacturer, was in a defective condition unreasonably dangerous for its intended purpose, according to engineering and manufacturing practices which were reasonably feasible;

(B) the defective condition is a proximate cause of the claimant's harm; and

(C) the general aviation aircraft was being used at the time of the accident for a purpose and in a manner for which it was designed and manufactured.

(2) Any person claiming damages for harm arising out of a general aviation accident may bring an action against a general aviation manufacturer of a product and may recover damages from such general aviation manufacturer if—

(A) at the time the product left the control of the manufacturer, the manufacturer—

(i) knew, or in the exercise of reasonable care should have known, about a danger connected with the product that caused the claimant's harm; and

(ii) failed to provide the warnings or instructions that a person exercising reasonable care would have provided with respect to the danger which caused the harm alleged by the claimant, unless such warnings or instructions, if provided, would not have materially affected the conduct of the user of the product; or

(B) after the product left the control of the general aviation manufacturer, the manufacturer—

(i) knew, or in the exercise of reasonable care should have known, about the danger which caused the claimant's harm; and

(ii) failed to take reasonable steps to provide warnings or instructions, after the manufacture of the product, which would have been provided by a person exercising reasonable care, unless such warnings or instructions, if provided, would not have materially affected the conduct of the product user;

and the failure to provide warnings or instructions described in subparagraph (A) or (B) of this paragraph is a proximate cause of the claimant's harm.

(3) Any person claiming damages for harm arising out of a general aviation accident may bring an action against a general aviation manufacturer of a product and may recover damages from such general aviation manufacturer if—

(A) the manufacturer made an express warranty with respect to the product;

(B) such warranty relates to that aspect of the product which caused the harm;

(C) the product failed to conform to such warranty; and

(D) the failure of the product to conform to such warranty is a proximate cause of the claimant's harm.

(c)(1) In an action governed by subsection (b) of this section, a general aviation manufacturer shall not be liable if such manufacturer proves, by a preponderance of the evidence, that—

(A) the defective condition could have been corrected by compliance with action described in an airworthiness directive issued by the Administrator or a service bulletin issued by the manufacturer of the product; and

(B) such directive or service bulletin was issued at a reasonable time before the date of the accident and after the product left the control of the general aviation manufacturer.

(2) In any action governed by subsection (b) of this section, evidence of compliance with standards, conditions or specifications established, adopted or approved by the Federal Aviation Administration shall be admissible with regard to whether the product was defective and unreasonably dangerous for its intended purpose.

COMPARATIVE RESPONSIBILITY

SEC. 6. (a) All actions for harm arising out of a general aviation accident shall be governed by the principles of comparative responsibility. Comparative responsibility attributed to the claimant's conduct shall not bar recovery in an action under this Act, but shall reduce any damages awarded to the claimant in an amount proportionate to the responsibility of the claimant. The trier of fact shall determine comparative responsibility by making findings indicating the percentage of total responsibility for the claimant's harm attributable to the claimant, each defendant, each third-party defendant, and any other person not a party to the action.

(b) Except as provided in subsection (c) of this section, a defendant is severally but not jointly liable in any action for harm arising out of a general aviation accident, and the liability of any defendant in any such action shall be determined

on the basis of such defendant's proportionate share of responsibility for the claimant's harm.

(c) In any action for harm arising out of a general aviation accident—

(1) a general aviation manufacturer who is the builder or manufacturer of the airframe of the general aviation aircraft involved is jointly and severally liable for harm caused by a defective system, component, subassembly, or other part of such aircraft that the manufacturer installed or certified as part of the original type design for such aircraft; and

(2) a general aviation manufacturer who is the manufacturer of a system or component of the general aviation aircraft involved is jointly and severally liable for damages caused by a defective subassembly or other part of such system or component.

(d) A general aviation manufacturer and any other person jointly liable under subsection (c) of this section shall have the right to bring an action for indemnity or contribution against any person with whom they are jointly liable under subsection (c) of this section.

TIME LIMITATION ON LIABILITY

SEC. 7. (a) Except as provided in subsection (b) of this section, no civil action for harm arising out of a general aviation accident which is brought against a general aviation manufacturer may be brought for harm which is alleged to

have been caused by an aircraft or a system, component, subassembly, or other part of an aircraft and which occurs more than—

(1) twenty years from—

(A) the date of delivery of the aircraft to its first purchaser or lessee, if delivered directly from the manufacturer; or

(B) the date of first delivery of the aircraft to a person engaged in the business of selling or leasing such an aircraft; or

(2) with respect to any system, component, subassembly, or other part which replaced another product in, or which was added to, the aircraft, and which is alleged to have caused the claimant's harm, twenty years from the date of the replacement or addition.

(b) Subsection (a) of this section does not apply in the case of harm to a claimant which occurs after the period set forth in subsection (a) of this section if the general aviation manufacturer or the seller of the product that caused the claimant's harm gave an express warranty that the product would be suitable, for the purpose for which it was intended, for a longer period of time.

(c) Nothing in this section shall be construed to affect a person's duty to provide, after the sale or lease of an aircraft, to aircraft owners, and to repair facilities to which a license

or certificate to perform repairs has been issued by the Administrator, additional or modified warnings or instructions regarding the use or maintenance of such aircraft or any system, component, or other part of such aircraft.

SUBSEQUENT REMEDIAL MEASURES

SEC. 8. In any general aviation accident liability action governed by this Act, evidence of any measure taken after an event which, if taken previously, would have made the event less likely to occur is not admissible to provide liability. Such evidence is admissible to the extent permitted under rule 407 of the Federal Rules of Evidence.

ADMISSIBILITY OF CERTAIN EVIDENCE

SEC. 9. In an action governed by this Act, evidence of Federal, State, or local income tax liability or any Social Security or other payroll tax liability attributable to past or future earnings, support, or profits and the present value of future earnings, support, or profits alleged to have been lost or diminished because of harm arising out of a general aviation accident is admissible regarding proof of the claimant's harm.

PUNITIVE DAMAGES

SEC. 10. (a) Punitive damages may be awarded in an action under this Act for harm arising out of a general aviation accident only if the claimant establishes by clear and convincing evidence that the harm suffered was the direct result of conduct manifesting a conscious, flagrant indiffer-

ence to the safety of those persons who might be harmed by use of the general aviation aircraft involved.

(b) Evidence regarding the financial worth of a defendant or the defendant's profits or any other evidence relating solely to a claim for punitive damages under this Act is not admissible unless the claimant establishes, before any such evidence is offered, that the claimant can present evidence that will establish prima facie proof of conduct manifesting a conscious, flagrant indifference to the safety of those persons who might be harmed by use of the general aviation aircraft involved.

(c) In any civil action in which the alleged harm to the claimant is death and the applicable State law provides, or has been construed to provide, for damages only punitive in nature, a defendant may be liable for any such damages pursuant to the provisions of this Act regardless of whether a claim is asserted under this section. The recovery of any such damages shall not bar a claim under this section.

TIME LIMITATION ON BRINGING ACTIONS

SEC. 11. (a) Any action for harm arising out of a general aviation accident shall be barred, notwithstanding any State law, unless—

(1) the complaint is filed within two years after the date on which the accident occurred which caused the claimant's harm; and

(2) the summons and complaint are properly served upon the defendant within one hundred and twenty days after the filing of such complaint, unless the party on whose behalf such service is required can show good cause why such service was not made within such one-hundred-and-twenty-day period.

Paragraph (2) of this subsection shall not apply to service of process in a foreign country pursuant to rule 4(i) of the Federal Rules of Civil Procedure or any similar State law.

SANCTIONS

SEC. 12. It is the intent of Congress that, with respect to any action governed by this Act, the sanctions for violation of rule 11 of the Federal Rules of Civil Procedure, including orders to pay to the other party or parties the amount of their reasonable expenses, including a reasonable attorney's fee, be strictly enforced.

JURISDICTION

SEC. 13. (a) The district courts of the United States, concurrently with the State courts, shall have original jurisdiction, without regard to the amount in controversy, in all civil actions for harm arising out of a general aviation accident and in all actions for indemnity or contribution described in section 6(d) of this Act.

(b) A civil action which is brought in a State court may be removed to the district court of the United States for the district embracing the place where the action is pending,

without the consent of any other party and without regard to the amount in controversy, by any defendant against whom a claim in such action is asserted for harm arising out of a general aviation accident.

(c) In any case commenced in or removed to a district court of the United States under subsection (a) or (b) of this section, the court shall have jurisdiction to determine all claims under State law that arise out of the same general aviation accident, if a substantial question of fact is common to the claims under State law and to the Federal claim, defense, or counterclaim.

(d)(1) A civil action in which the district courts of the United States have jurisdiction under subsection (a) of this section may be brought only in a district in which—

(A) the accident giving rise to the claim occurred; or

(B) any plaintiff or defendant resides.

(2) In an action pending in a district court of the United States under paragraph (1) of this subsection, a district court may, on motion of any party or its own motion, transfer the action to any other district for the convenience of parties and witnesses in the interest of justice.

(3) For purposes of this subsection, a corporation shall be considered to be a resident of any State in which it is incorporated or licensed to do business or is doing business.

SEVERABILITY

SEC. 14. If any provision of this Act or the application of the provision to any person or circumstance is held invalid, the remainder of this Act and the application of the provision to any other person or circumstance shall not be affected by such invalidation.

EFFECTIVE DATE

SEC. 15. (a) This Act shall apply to any civil action for harm arising out of a general aviation accident which is filed on or after the date of enactment of this Act.

(b) If an action governed by this Act is filed within one hundred and eighty days after the date of enactment of this Act, liberal leave shall be given to a party to amend any pleading, motion, statement of jurisdiction or venue, or other matter to conform to the provisions of this Act.

Senator HEFLIN. I would like to welcome Senator Kassebaum and Representative Glickman, as well as the other witnesses who have agreed to participate in this hearing. We look forward to your testimony.

Senator Kassebaum, we would be glad to hear from you.

Senator KASSEBAUM. Thank you, Mr. Chairman. Congressman Glickman will go first in his testimony.

Senator HEFLIN. All right, sir.

STATEMENT OF A PANEL CONSISTING OF HON. DAN GLICKMAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF KANSAS; AND HON. NANCY LANDON KASSEBAUM, A U.S. SENATOR FROM THE STATE OF KANSAS

STATEMENT OF HON. DAN GLICKMAN

Mr. GLICKMAN. Thank you very much. Senator Heflin and Senator Kassebaum, thank you for allowing me to testify today. I am the principal sponsor of the companion bill on the House side, which has 185 sponsors of both parties. In addition, I represent Wichita, KS, which is the home to Beech, Cessna, Learjet, as well as a variety of other aviation companies. So I have an interest in this from a parochial matter as well. I am also a member of the Judiciary Committee on the other side.

I am not going to repeat all of the problems that this industry is facing because the witnesses who will follow will do a much better job than I. I can only say, however, that liability costs for manufacturers of airplanes have skyrocketed nearly tenfold in the last 10 years, despite a steady and dramatic improvement in safety.

Liability costs are now the largest single cost component in the manufacture of the airplane, pushing the price of new aircraft beyond the reach of many consumers. The direct result is a drop in new aircraft sales, and this is a phenomenal statistic, from 18,000 airplanes in 1978 to over 1,000 airplanes in 1987. As a result, about 70 percent of the jobs in the industry have been lost.

Senator Kassebaum and I introduced this bill to try to provide a balanced, fair, responsible way of federalizing product liability in general aviation without putting caps on damages, without limiting attorney's fees, and without taking away the rights that consumers have to go into the courts when they have been damaged. We believe that this bill, in fact, does that.

I would just make two quick points. Number 1, aviation insurance is not covered by the McCarran-Ferguson Act, and therefore does not enjoy protection from scrutiny under the Federal antitrust laws. In this context, uniform Federal liability standards are necessary and appropriate.

Some argue the problem with liability in this country is the insurance problem, and therefore we need to fix the antitrust exemption. I happen to basically agree with that, and in the Judiciary Committee last week I was one of those who voted in favor of a bill to modify McCarran-Ferguson. But it should be noted that in aviation, McCarran-Ferguson is inapplicable because there is virtually no State regulation of aviation insurance at all.

Second of all, aviation is federal; it is federal from birth to death. To get your plane licensed, inspected, manufactured, flown, certi-

fied, Uncle Sam does it all. There is no State involvement in the manufacture or the flying of airplanes, from air traffic control to collision avoidance systems to all sorts of things.

I do not have to tell you what that involves, but all I am saying is if you have got a 100-percent Federal involvement in an industry, why would you have 50 separate State laws on product liability? In certain industries, we have already recognized that fact, with vaccines and in some other cases where there is a clear national interest.

So, Mr. Chairman, I would say that this bill contains modest changes; it is not draconian. It has the support of the entire general aviation community, from manufacturers to consumers and pilots.

I would like to also mention to you the status of this bill in the House. This bill has passed the full House Public Works Committee. It was jointly referred to three committees, including Judiciary and Energy and Commerce. The Energy and Commerce Committee has just completed work on a broader product liability bill; this bill is not a part of it.

This bill will move separately from that because we have chosen not to risk the future of this bill on the many problems and encumbrances of that larger product liability bill.

The parliamentary situation for this bill in the House is probably more difficult than it is in the Senate because of joint referrals as opposed to sequential referrals.

But the passage of this bill by this committee and sending it to the floor for passage by the Senate, moving on Senator Kassebaum's request, I think, will be very important in terms of getting a bill passed in the House.

I have lived with this for about 5 years now. This is, you know, kind of blood, sweat, toil, and tears to Wichita. We have lost just thousands of jobs. Peoples' lives have been wrecked by the fact that this industry does not produce very many airplanes anymore.

I think it can come back, and it is a uniquely American industry, the production of small airplanes. And if we want to keep it that way, I think we have got to make some reasonable modifications in product liability laws.

And so I thank you for allowing me to testify today and I appreciate very much my entire statement being included in the record.

[The prepared statement of Mr. Glickman and his responses to questions posed by Senator Thurmond follow:]

STATEMENT OF
REPRESENTATIVE DAN GLICKMAN (D-KS)
BEFORE THE SENATE JUDICIARY SUBCOMMITTEE
ON COURTS AND ADMINISTRATIVE PRACTICE
JUNE 21,1988

Mr. Chairman, members of the Subcommittee, I want to thank you for allowing me to testify this morning on behalf of The General Aviation Accident Standards Act, a bill that could help provide a future for the American general aviation industry. I am the principal sponsor of the companion bill in the House, which now has over 185 cosponsors of both parties, and I represent Wichita, Kansas, which is the home to Beech, Cessna, and Learjet. I have promised to keep my statement brief, so I will get to the heart of the issue.

An American industry that has traditionally dominated the international marketplace is threatened by foreign manufacturers; not because of an inability to compete, but because an unfair system of product liability laws is forcing U.S. general aviation manufacturers out of business. Liability costs for American manufacturers have skyrocketed--from $24 million in 1977 to $210 million in 1988, <u>despite a steady and dramatic improvement in safety</u>. Liability costs are now the largest single cost component in the manufacture of an airplane, pushing the price of new aircraft beyond the reach of many consumers. The direct result is a drop in new aircraft sales from 18,000 units in 1978 to only 1,085 in 1987. As many as 70% of the jobs in the industry have been lost since 1980.

Foreign manufacturers, not encumbered by the high liability costs of American manufacturers, are moving rapidly to fill the void. At a time when we are all concerned about the competitiveness of American manufacturers, we are witnessing the demise of a high tech industry that historically has contributed greatly to the domestic economy and the balance of trade.

Congress has a special responsibility, by virtue of the pervasive

federal regulation of this industry, to act to resolve this crisis by enacting uniform federal standards of liability. General aviation products are federally regulated from design through production and throughout the product's service life including maintenance activities. Pilots are regulated through training, licensing and operating procedures. Mechanics and repair facilities that maintain the products are regulated as to the training and scope of the duties they perform. The air traffic control system is federally operated and interstate in scope. Furthermore, aviation insurance is not covered by the McCarran-Ferguson Act and therefore does not enjoy protection from scrutiny under the federal antitrust laws. In this context, uniform federal liability standards are necessary and appropriate.

This bill contains modest and reasonable changes in liability laws but contains no caps on awards or limitations on attorney's fees. It is supported by the entire general aviation community: manufacturers, consumers, and pilots. Mr. Chairman, I trust this Committee will concur in the action taken by the Senate Commerce Committee so we can move it ahead toward passage in the 100th Congress. Thank you.

DAN GLICKMAN
FOURTH DISTRICT—KANSAS

ASSISTANT MAJORITY WHIP

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SCOTT FLEMING
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ROBERT P. MARTIN
KANSAS DIRECTOR

June 28, 1988

The Honorable Howell Heflin, Chairman
Subcommittee on Courts and Administrative Practice
Senate Judiciary Committee
223 Hart Senate Office Building
Washington, DC 20510

Dear Howell:

I appreciate your giving me the opportunity to speak on behalf of the General Aviation Accident Liability Standards Act of 1988, S. 473. I would like to respond to the questions posed by Senator Thurmond.

1) To what extent will this legislation help restore jobs that have been lost due to the decline in the General Aviation industry?

I believe that the statistics present a strong case for the proposition that the loss of jobs in the industry is directly tied to the tenfold increase in liability-related paid claims in the past decade. The general aviation industry is self-insured for the most part, so these costs are borne directly by the manufacturers rather than insurance companies. As a result, the cost must be passed on to the aircraft consumer. In some cases, insurance costs alone exceed $100,000 per aircraft. Increasing costs are the central reason that sales in general aviation aircraft have fallen by 90% since 1979. This bill would help to lower these liability costs, and if the cost of airplanes were lowered, the laws of economics would point toward an increase in sales, and a resultant increase in employees to build those planes. I cannot overemphasize the importance of these jobs to the State of Kansas and the country as a whole.

2) If enacted, do you believe this legislation will result in a decrease in liability costs, and if so, will it be passed on to aircraft purchasers?

American manufacturers are facing increasing competition from abroad because foreign manufacturers are not burdened by the same high liability costs. This is partially explained by the fact that plaintiffs are suing American manufacturers for accidents involving planes that are thirty or forty years old. As relatively new entrants in the U.S. market, foreign manufacturers do not have these old planes waiting to be sued upon. Therefore, they can undercut prices by American manufacturers and gain market share. In order for American manufacturers to maintain a place in the general aviation market, they must compete by lowering prices. In short, I do believe that enactment of this legislation would result in significantly lower prices, as well as broader offerings of low cost planes which cannot at this point be sold because of the liability costs.

I hope that I have answered these questions satisfactorily. Again, I thank the Chairman for the Subcommittee's prompt action on this bill. If I can be of further assistance, please do not hesitate to contact my office.

Best Regards,

Dan Glickman

Senator HEFLIN. Senator Kassebaum.

STATEMENT OF HON. NANCY LANDON KASSEBAUM

Senator KASSEBAUM. Mr. Chairman, I appreciate Congressman Glickman coming over and giving us the status of the House at this particular juncture because he and others there have worked very hard and I think he stated the case well.

I would just like to ask that my full statement be made a part of the record and to thank you for holding this hearing, Mr. Chairman. We have passed it out of the Commerce Committee, and this is a very important hearing and there is going to be some good testimony.

I would particularly like to introduce Bob Martin, who will be testifying and I think will add a great deal of important information. He is the senior partner of a Wichita law firm, Martin, Pringle, Oliver, Wallace & Swartz. That firm is general counsel to Beech Aircraft.

During the 17 years that he has been counsel to them and handled the product liability litigation, he has built up a reputation as one of the most knowledgeable persons in the country on the practical effects of existing tort law on the general aviation industry, and it has been well stated by Congressman Glickman.

I hope, Mr. Chairman, that you, in your wisdom, and the Judiciary Committee will join in support with the Commerce Committee on what I think is a unique piece of legislation dealing with a unique situation in the product liability arena.

It is for that reason that I am very appreciative of your holding the hearings and hope that you will join us in the Commerce Committee in reporting favorably this bill.

Thank you, Mr. Chairman.

[The prepared statement of Senator Kassebaum and a letter responding to questions posed by Senator Thurmond follow:]

OPENING STATEMENT

COMMITTEE ON THE JUDICIARY

SUBCOMMITTEE ON COURTS AND ADMINISTRATIVE PARCTICE

GENERAL AVIATION PRODUCT LIABILITY

JUNE 21, 1988

SENATOR NANCY LANDON KASSEBAUM

Mr. Chairman -- I applaud the subcommittee for holding this hearing on the General Aviation Accident Liability Standards Act, S.473 --legislation I introduced at the beginning of the 100th Congress.

The heart of the bill is the creation of federal liability standards, including the retention of strict liability. The bill retains completely joint and several liability between the manufacturers of all subsystems and component parts and enacts comparative responsibility among other parties. It also establishes a 20-year statute of repose for aircraft and replacement parts--which begins anew each time a part is replaced.

I also want to make it clear what this bill does NOT do. It does not cap damages in any way. It does not cap or limit attorneys fees. It does

not waive the responsibility to supply warnings against dangers regardless of the age of the product. Nor does it limit a person's right to sue.

In 1979, over 17,000 general aviation aircraft were sold in the United States. In 1986 there were 1,495 units sold which is a 26 percent decrease from 1985. The year 1987 was no better. Product liability costs (judgments, settlements, and out of pocket defense costs) incurred by the industry have skyrocketed from $24 million in 1977 to $209 million in 1985, despite the fact that general aviation accident rates have continued to decline. Unemployment in the domestic industry has risen to a staggering 65 percent. Such massive unemployment not only strips workers of a means of livelihood, it takes away the skills and dedicated work force necessary if we are to ever rebuild this industry.

Technology and innovation are being stifled because of prohibitive product liability costs. Airframe manufacturers are finding it increasingly difficult to find component manufacturers, as many businesses are totally giving up their aviation product lines as too costly to maintain. All of this adds up to even more American jobs lost. The increasing export of our industry is a tragedy.

The product liability problem facing the U.S. general aviation industry is much more than a domestic problem. The harm it causes is reflected in general aviation trade figures. Prior to 1981, U.S. general aviation exports contributed an annual multi-million dollar surplus to our nation's balance of trade. In 1981, and every year since, the U.S. general

aviation industry has suffered significant trade deficits--contributing to the national trade deficit which has become a matter of grave concern.

Foreign manufacturers stand to be big winners if this product liability problem is not resolved. Their tort liability pales in comparison with that of the large U.S. manufacturers. This is in large part due to the fact that they do not have the enormous numbers of aircraft in service in the United States, each of which remains a liability of the manufacturer, regardless of age. There is a significantly smaller percentage of foreign aircraft in service in the United States subject to our domestic tort laws. That results in considerably lower liability risk and a considerable competitive advantage for foreign manufacturers.

This same lack of competitive pricing is taking its toll on the U.S. market as well. Cessna Aircraft, the world's largest general aviation manufacturer, suspended production of all piston engine aircraft through the 1987 model year. Piper Aircraft has stated it may be forced to manufacture only one piston engine aircraft, and Beech Aircraft has cut back its production significantly. No training airplanes are being made in the United States. As foreign manufacturers move in to fill this near vacuum in domestic airplane supplies, the U.S. industry's negative trade balance will likely increase.

The erosion of U.S. general aviation competitiveness is in great part the result of the devastating effects of our current product liability environment; its future is largely dependent on the resolution of the

problem. The federal government regulates the industry from design to production; it regulates the training and licensing of pilots and mechanics; the air traffic control system is federally operated and regulated. The federal interest and presence in aviation is all pervasive except in one area--litigation is conducted under individual and widely varying state laws. Federal product liability standards, a cornerstone of this legislation, would provide uniformity and predictability.

The other provisions of the legislation are fair and balanced to both plaintiff and defendant. Those provisions have three underlying objectives: compensation for innocent victims that is timely and fair, treatment of product manufacturers that is reasonable and just, and insurance that is available and affordable.

Virtually all of the national general aviation consumer groups support S.473. This support for product liability reform by both manufacturers and users is unique. Today's hearing will provide additional evidence of a crisis facing the general aviation industry in this country. I believe we have the ability and the opportunity to moderate this crisis, if we have the courage to press ahead for reform of our liability system.

LAWTON CHILES, FLORIDA, CHAIRMAN

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United States Senate

COMMITTEE ON THE BUDGET
WASHINGTON, DC 20510-6100

June 29, 1988

The Honorable Howell Heflin
Chairman, Subcommittee on Courts
and Administrative Practice
Committee on the Judiciary
United States Senate
Washington, D.C. 20510

Dear Howell:

In response to your letter of June 22, I would like to submit answers to the two questions posed by Senator Thurmond.

1. Senator Kassebaum, what do you view as the long- and short-term benefits of this legislation for the aircraft industry?

Senator Thurmond, I am sure you have seen the general aviation (G/A) industry graph which depicts the continued improvement in the fatal accident rate since World War II while displaying a near-vertical line tracing the escalation of paid-claims costs for G/A product liability over the past ten years. Due to this enormous cost burden, manufacturers have had to take extraordinary actions, resulting in reduced production, discontinuance of many model lines, and extensive personnel layoffs. In Kansas, for example, the Cessna Aircraft Company's payroll has dropped from over 20,000 in 1981 to less than 5,000 today.

This bill's short-term benefits should restore some measure of fairness to our nation's tort system, provide some leveling off of the meteoric liability cost curve, encourage a resumption of piston engine aircraft production, and provide renewed employment opportunities for countless aircraft workers.

The long-term benefits should include a return of the U.S. general aviation industry to its familiar role as world leader in the field of general aviation, enable manufacturers to price their products more competitively, stabilize employment, and make affordable insurance available once again.

The alternative to passage of this legislation is, I fear, the demise of our domestic general aviation industry.

2. Senator Kassebaum, how will legislation, such as S. 473, restore competitiveness to the general aviation industry?

Senator Thurmond, the current product liability situation is having a deleterious effect on U.S. general aviation competitiveness. United States

manufacturers collectively must bear the product liability burden of some 200,000 airplanes still in service--many over 40 years old. This cost burden must ultimately be borne by consumers and is reflected in today's product prices.

Foreign general aviation manufacturers have not been producing airplanes for nearly as long, so they do not have the huge "liability tail" of the U.S. manufacturers. Moreover, their liability for the enormous judgments which characterize the U.S. tort system is limited to only a fraction of their total fleet--those airplanes in service in the United States. The others are subject to other tort systems throughout the world which are characterized as rational, sane, modest, and responsible. The net result of these cost and liability disparities is a competitive advantage for foreign producers. Many new foreign aircraft are now under development, and I am concerned about the future of the U.S. industry. Passage of S. 473 should, in time, moderate these disparities and help restore competitiveness to the U.S. general aviation industry.

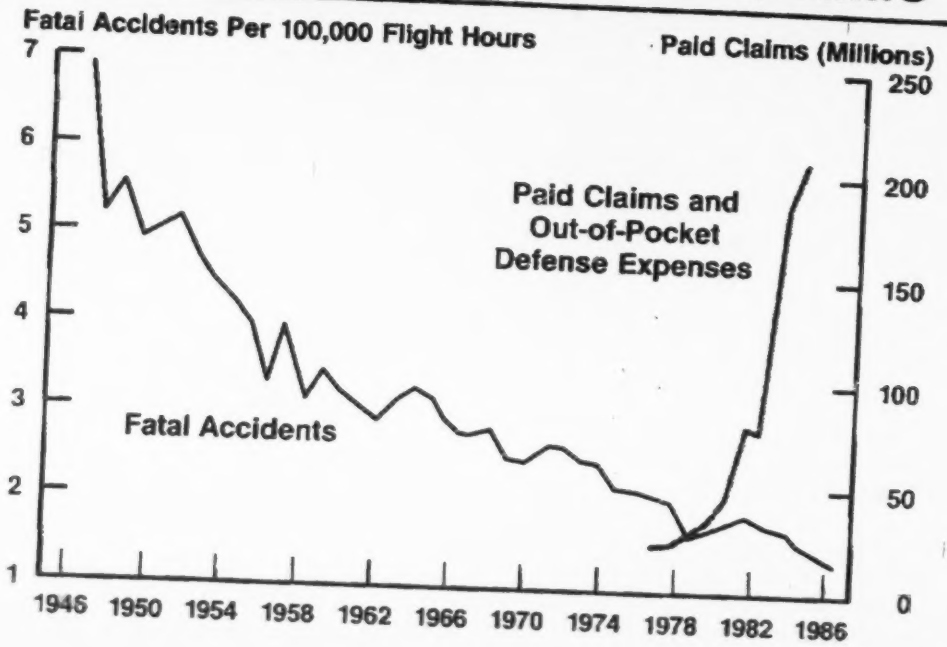
Warmest regards,

Nancy

Nancy Landon Kassebaum
United States Senator

NLK:pro
Enclosure

GENERAL AVIATION FATAL ACCIDENTS AND PAID CLAIMS



Senator HEFLIN. Thank you.

As I understand it, the Department of Justice, since the Commerce Committee has approved this, has written a letter which I have read, which I interpret, and it may be subject to different interpretation, that they are opposed to this bill as presently drafted.

Now, do you all have any comments relative to this matter that you would——

Senator KASSEBAUM. Well, I have seen this letter, Mr. Chairman, and I think it is subject to different interpretations. One, no one seems to know who requested the letter and, two, it seems to be speaking of two minds.

On the one hand, it is supportive of the legislation and, on the other, it raises questions regarding interpretation of federal law. You are the lawyer, Mr. Chairman, and the judge.

Senator HEFLIN. Of course, I would assume that the most reasonable interpretation would be that if you make the changes that the Department of Justice may support the bill.

It says:

> Therefore, while we do not dispute the seriousness of the problems which have generated this bill, and believe that those problems are deserving of redress, the concerns expressed above should be addressed prior to the administration's support of S. 473.

So the Justice Department enumerates six or seven different objections to this legislation.

Mr. GLICKMAN. Mr. Chairman, I just have read the letter. I have it right here.

[Letters submitted for the record follow:]

U.S. Department of Justice

Office of Legislative Affairs

Office of the Assistant Attorney General

Washington, D.C. 20530

June 13, 1988

Honorable Ernest F. Hollings
Chairman
Committee on Commerce, Science, and Transportation
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

This provides the views of the Department of Justice on S. 473, The General Aviation Accident Liability Standards Act of 1987. We note that similar legislation has been proposed in both Houses on previous occasions, and its reintroduction in this form reflects the continuing and genuine product liability crisis which has crippled the general aviation industry in the United States. Although we would prefer a comprehensive national approach to the product liability problem, rather than an industry-by-industry approach, we do not oppose the bill for this reason.

However, there are additional provisions which we find undesirable and unnecessary in the bill's attempt to address this industry's product liability problem. Primary among these is the extension of the bill to cover all tort actions arising out of general aviation accidents, whether or not grounded in product liability, arguably (though not expressly) including actions against the United States [Sections 4(e)(2), 5(a)]. Although Section 4(b) states that the Act shall not be construed "to supersede or to waive or affect any defense of sovereign immunity asserted by the United States", this savings clause would not affect the potential conflict between this bill's venue provisions [Section 13(d)(1)] and those of the Federal Tort Claims Act [28 U.S.C. § 1402(b)]. We perceive no reason why the United States should not be subjected to the more liberal venue provisions of this bill.

The bill's broad preemption of state law, while arguably necessary to address products liability, would also preempt state law in negligence-based actions involving the United States. Some of the changes would be very advantageous, most particularly the abolition of joint and several liability contained in Section 6(b). Other provisions, such as the nationwide establishment of "pure" comparative negligence [Section 6(a)], would remove a useful bar to plaintiffs' recoveries in those states which now bar recovery at or above

50 per cent comparative negligence, or which still recognize contributory negligence as a complete bar.

Other preemptive provisions are less favorable for non-governmental defendants than the tort reform provisions already adopted by some states. For example, the provisions for punitive damages in the bill are less restrictive than the actions taken by some states which have capped or otherwise restricted such damages (and certainly those states, such as New Hampshire, which have never provided for such damages); and the provision for joint and several liability among general aviation airframe and component/sub-assembly manufacturers, as well as for indemnity and contribution among them [Section 6(c) & (d)], reinstates such liability in states (such as Utah) which have completely abolished it. Language from the Department's product liability legislation could provide an alternative:

> The provisions of this Act shall preempt and supersede any State law to the extent such law is inconsistent with the limitations contained in such provisions. The provisions of this Act shall not preempt or supersede any State law that provides defenses or places limitations on a person's liability in addition to those contained in this Act.

Finally, the extensive expansion of federal district court jurisdiction provided by Section 13 is certain to place a considerable additional burden upon the federal system. We believe that most defendants would avail themselves of the removal provisions of the bill for cases commenced in state courts. Under the provisions of this bill, a minor landing accident, for example, causing only a few thousand dollars' damage to the aircraft, would provide a basis for federal jurisdiction. At the same time, defendants in an air carrier accident case would not be protected by this bill, and could not avail themselves of its jurisdictional provisions. Utilizing the size of an aircraft involved in an accident as the determining factor for federal jurisdiction is not particularly logical, in our view.

Therefore, while we do not dispute the seriousness of the problems which have generated this bill, and believe that those problems are deserving of redress, the concerns expressed above should be addressed prior to the Administration's support of S. 473.

The Office of Management and Budget has advised this Department that there are no objections to the submission of this report from the standpoint of the Administration's program.

Sincerely,

Thomas M. Boyd
Assistant Attorney General

U.S. Department of Justice

Office of Legislative Affairs

Office of the Assistant Attorney General

Washington, D.C. 20530

26 JUL 1988

Honorable Robert C. Byrd
Senate Majority Leader
United States Senate
Room S221 - The Capitol
Washington, D. C. 20510-4801

Dear Mr. Leader:

It has come to the Department's attention that S. 473, the General Aviation Accident Liability Standards Act of 1987, has reached the floor of the Senate and may soon be considered there. The Department previously provided its views on the bill in a letter dated June 13, 1988, to Senator Ernest F. Hollings, Chairman of the Committee on Commerce, Science, and Transportation. Apparently, there is some confusion about our position on S. 473. I would like to take this opportunity to erase any ambiguities.

The Department has steadfastly supported tort reform measures as a means of resolving the product liability problems faced by our American companies, and we have been seeking a comprehensive national approach to product liability reform rather than industry-by-industry reforms. This preference, however, does not draw the Department into opposition to this legislation, which offers generally well considered and workable solutions to the problems faced by the domestic general aviation industry. Our letter of June 13, 1988 did not oppose the bill. Rather, it was intended to focus on several amendments, technical in nature, that will add to the clarity and purpose of the bill.

As we stated in our letter to Chairman Hollings, the provisions of S. 473 should not be viewed as preempting the rights of States to pass additional tort reform measures deemed appropriate. For this reason, we suggested adding the language from the Department's product liability legislation:

> The provisions of this Act shall preempt and supersede any State law to the extent such law is inconsistent with the limitations contained in such provisions. The provisions

> of this Act shall not preempt or supersede any State law that provides defenses or places limitations on a person's liability in addition to those contained in this Act.

We would hope that this language, or similar language will be offered as an amendment to the Bill.

Section 4(b) of S. 473 preserves to the United States sovereign immunity defenses in the following language:

> Nothing in this Act shall be construed to supersede or to waive or affect any defense of sovereign immunity asserted by the United States or any State.

This savings clause, without some clarification, may affect the Federal Tort Claims Act's ("FTCA") statutory framework in ways which are not intended, such as FTCA provisions affecting venue. To alleviate any ambiguity, therefore, we suggest that a new phrase be added to the end of the savings clause, at section 4 (b), to provide the following:

> nor shall any provision of this Act be construed to supersede, waive or affect any condition, limitation, or procedure pertaining to any claim, action, or proceeding for damages otherwise applicable to the United States or any State.

The only additional technical change we feel is necessary would be to adopt the "amount in controversy" jurisdictional limits of Federal District Courts found at 28 U.S.C. § 1332. This amendment could be effected by deleting from section 13(a), the phrase "without regard to the amount in controversy" and substituting in its place the phrase "in cases where the amount in controversy exceeds the sum provided in 28 U.S.C. § 1332(a)." This would be consistent with current federal court practice, and would ensure that less complex matters involving small amounts in controversy (i.e., below $10,000) would not be brought in federal district courts. This would avoid any unnecessary burden being placed on the already overcrowded federal court system.

As previously stated, we believe these amendments are technical in nature, and as such, do not reflect on the substantive desirability of adopting S. 473, which the Department otherwise supports. We hope the Senate will move swiftly in acting favorably on this legislation.

The Office of Management and Budget has advised this Department that there is no objection to the presentation of this report from the standpoint of the Administration's program.

Sincerely yours,

Thomas M. Boyd
Acting Assistant Attorney General

Mr. GLICKMAN. This letter is ridiculous because this administration repeatedly sent down legislation to completely revamp and modify all product liability laws in this country, from torts involving malpractice to everything else.

This bill that Senator Kassebaum has drafted is a narrowly crafted bill that phases down dramatically the kind of tort legislation that the Attorney General and the President send down.

Now, for them at this point to say that they believe that Federal preemption is unnecessary when last year they sent down complete preemption of all torts, almost, is utterly absurd.

So I do not know where they are coming from, but it does not make any sense. Something is screwed up down there.

Sorry. [Laughter.]

Senator KASSEBAUM. I would only say, Mr. Chairman, that I think Mr. Martin is prepared to answer some of your questions regarding that and whether some of their questions can be answered.

I found it confusing, as does Congressman Glickman, because they imply that separating the general aviation legislation causes them some problems as well, which I just cannot understand the thrust of——

Senator HEFLIN. I gather you are not as critical of the position as Congressman Glickman.

Senator KASSEBAUM. Well, I am; I am just phrasing it a different way.

Senator HEFLIN. All right. Thank you.

Senator KASSEBAUM. Thank you very much.

Senator HEFLIN. Senator Thurmond, do you have an opening statement, and would you like to ask some questions?

Senator THURMOND. Thank you, Mr. Chairman.

We are very glad to have Senator Kassebaum here, the queen of the Senate. We are very pleased to have Mr. Dan Glickman, an able Member of the House, here to testify for us.

Mr. GLICKMAN. Thank you.

Senator THURMOND. I have a very brief statement, Mr. Chairman.

Senator HEFLIN. We would be delighted to hear from the king. [Laughter.]

Senator THURMOND. I did not know I was that old, Mr. Chairman. [Laughter.]

OPENING STATEMENT OF HON. STROM THURMOND, A U.S. SENATOR FROM THE STATE OF SOUTH CAROLINA

Senator THURMOND. We are here today to conduct a hearing on S. 473, a bill to provide for uniform standards of liability for general aviation accidents. This bill, introduced by Senator Kassebaum, was favorably reported by the Commerce Committee on April 26, 1988.

As the bill relates to the standards of liability applying to civil actions concerning general aviation and involves the jurisdiction of the Federal district courts, it was sequentially referred to the Judiciary Committee for our consideration.

Briefly, I would like to discuss several provisions included in this legislation. S. 473 would preempt State law by providing uniform

standards of liability for claims arising out of general aviation accidents.

The bill grants concurrent jurisdiction in both State and Federal courts over cases arising out of general aviation accidents. It also provides for removal of any case filed in State court to Federal court by motion of any defendant.

A statute of repose is included, which maintains that the liability of a manufacturer is limited to the first 20 years after delivery of the product. Additionally, this bill adopts a concept of comparative responsibility. If more than one entity causes the accident, damages would be allocated on a percentage basis among all those found responsible. Further punitive damages would be awarded only where it could be shown that the manufacturer acted with conscious and flagrant disregard for the safety of others. Finally, the bill includes a 2-year statute of limitations.

S. 473 contains many provisions which affect the rights and liabilities of parties involved in general aviation product liability lawsuits. I have not reached any conclusion on this bill. It is a rather far-reaching bill and I do want to give careful consideration to it.

Out of the high respect I have for Senator Kassebaum, who introduced this bill, it would cause me to certainly study it most carefully, and I shall do that.

I am now in the conference on Armed Services, Mr. Chairman, so if you will excuse me, I have to go there. Thank you very much for your appearance here this morning, both of you.

Senator KASSEBAUM. Thank you.

Senator HEFLIN. Thank you.

We next have a panel: Mr. Robert Martin, the firm of Martin, Pringle, Oliver, Wallace & Swartz, of Wichita, KS; Mr. John Yodice, general counsel, Aircraft Owners and Pilots Association, Washington, DC; Mr. Charles T. Hvass, Jr., of Hvass, Weisman & King, Minneapolis, MN; and Linda A. Lipsen, legislative counsel, Consumers Union, Washington, DC.

Mr. Martin, we would be glad to hear from you first.

STATEMENT OF A PANEL CONSISTING OF ROBERT MARTIN, OF MARTIN, PRINGLE, OLIVER, WALLACE & SWARTZ, WICHITA, KS; JOHN S. YODICE, GENERAL COUNSEL, AIRCRAFT OWNERS AND PILOTS ASSOCIATION, WASHINGTON, DC; CHARLES T. HVASS, JR., HVASS, WEISMAN & KING, MINNEAPOLIS, MN; AND LINDA A. LIPSEN, LEGISLATIVE COUNSEL, CONSUMERS UNION, WASHINGTON, DC, ON BEHALF OF THE CONSUMERS UNION AND THE CONSUMER FEDERATION OF AMERICA

STATEMENT OF ROBERT MARTIN

Mr. MARTIN. Thank you, Mr. Chairman.

I will not read or even try to paraphrase the prepared statement that has been delivered. I do ask that it be made a part of the record.

Senator HEFLIN. Without objection, it will be ordered.

Mr. MARTIN. I will not restate the information that I have given in that prepared statement. I think perhaps most instructive in the

limited time that we have would be for me to turn, first of all, to the letter from the Justice Department.

I had a little difficulty understanding their position, but with some study I have identified certain areas respecting which they seem to express concern and I will just comment on those.

The first area where Justice would have a legitimate concern is an area in which I think they simply have misread the bill. The letter implies that this act would in some way affect the Federal Tort Claims Act and the defenses that are available to the Justice Department and the United States, both those that are procedural and those that are substantive, in claims prosecuted under the Federal Tort Claims Act.

Section 4 of this act says—and I am paraphrasing here, but what it says is that this act will not affect sovereign immunity of the United States or any State. The Federal Tort Claims Act, of course, is a list of exceptions, really, to sovereign immunity and is a part of the sovereign immunity doctrine of the United States, and we are not affecting it.

It was not the intention of the drafters of this act to impact the Federal Tort Claims Act in any way, and if Justice wishes to have some recitation of that in the act or if they would be satisfied with legislative history to that effect, I have no reluctance to state on behalf of the proponents of this act that nobody intends that and the act should not be so read.

The Justice Department raises what seems to me to be an interesting question, and I do not know why they raise it. They say that what the act suggests is that we should put a provision in this act which says, in effect, that we supersede State law by this act except to the extent that State law would be more favorable or provide defenses to the manufacturer.

That is certainly one position that the manufacturers could take. It is not a position that I personally agree with. I think that we are here saying we need Federal legislation because this industry is totally federally regulated.

I will not repeat what Congressman Glickman said, but what he said is right. This is unique. If we are going to say that we need Federal law to determine liability, then it strikes me as a little bit unfair to say we need Federal law except where the State law is better.

This brings me to the point I really want to make and then I will await the question-and-answer period. I am not the drafter of this act in the sense that I am the author of it, but I did participate in all of the conferences with other lawyers more skilled in drafting legislation than I am.

I did participate in all of the sessions that led to its drafting, and a great deal of the structuring is structuring that I had a lot to do with. This act is not a draconian act. It does not have any caps; it is not intended to cut off anybody's rights except with respect to the statute of repose, and I will mention that in a minute and the justification for it.

But other than that, this act preserves basically the concept of strict liability in tort for manufacturers, section 402(a) of the restatement of torts, and it adopts what is really the majority rule among the States. The problem here is that there are as many sets

of rules out there as there are States, and that is what is creating the problem.

Now, on the question of burden on Federal jurisdiction, in preparation for this hearing we had some research done and I want to provide these figures for the record and to the chairman.

The three largest general aviation manufacturers, which are Beech, Cessna, and Piper—and they represent probably more than 80 percent of the industry in terms of however you want to look at it and in terms of litigation as well.

We took a 2-year average because of the shortness of time, 1986 and 1987, so the figures you are going to get are current. Against those three manufacturers, collectively, there was an average of 220 lawsuits a year filed. This is not a big litigation burden in terms of the number of cases.

Where the burden comes in is that these cases, like most aviation cases, are large-dollar cases. The average claim in these 220 cases is about $10 million on an occurrence basis, and the cost of defending these cases and paying when you have to pay or winning when you can win—the average cost is about $500,000 apiece. That is what is creating the problem for the industry. If we can level the playing field and get a set of rules that will allow us to anticipate what the liability is, we can reduce that cost and hopefully save the industry.

Thank you.

[The prepared statement of Mr. Martin and responses to questions posed by Senators Heflin and Thurmond follow:]

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Statement of
Robert Martin
Martin, Pringle, Oliver, Wallace and Swartz
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Before
Subcommittee on Courts and Administrative Practices
Committee on the Judiciary
U.S. Senate
June 21, 1988

My name is Robert Martin. I am the senior partner in the law firm of Martin, Pringle, Oliver, Wallace and Swartz, Wichita, Kansas. Our law firm serves as general counsel for Beach Aircraft Corporation. Beech has been producing business aircraft since 1932 and during the last 55 years has produced nearly 50,000 aircraft. For the past 17 years, our law firm has had primary responsibility for all product liability claims and litigations asserted against Beech Aircraft Corporation. I am here to testify in support of S. 473, the General Aviation Accident Liability Standards Act.

In an effort to better manage the product liability problems of Beech, both the company and our firm have collected and studied the data available on the product liability problems of the entire general aviation industry. For the past decade, it has been my opinion, shared by the management of Beech, that the general aviation industry has been approaching a crisis in terms of its ability to cope with the cost burden of product liability exposure. I believe that crisis is now at hand and literally threatens to destroy the industry and frustrate the

national purpose expressed in the federal acts regulating the aviation industry and promoting aviation as an essential part of the national air transportation system.

Today GAMA estimates that about 1,000 new aircraft will be manufactured and sold during 1988 -- down over 90 percent from a few years ago. It is important to note that despite the general economic recovery that has been in progress now for some time, the trend in the unit sales of general aviation airplanes has continued its downward spiral, in large part because product liability costs have greatly increased the price of our products.

The following Beech figures will demonstrate the magnitude of this problem over the past few years:

During the period 1983 through 1986, a total of 203 accident claims were filed against Beech. The average value of plaintiffs' claims per accident was $ 9.86 million. The average claim value per fatality was $ 3.74 million. The actual cost per accident to Beech for loss and defense expenses was $ 530,000 -- considerably less than the claims, but a total well in excess of $ 100 million.

The real story, however, is found in the "probable cause" findings of the investigations conducted by the NTSB/FAA. Pilot or operator error was cited in 118 of the accidents -- well over half. Maintenance, weather and other causes were also mentioned. However, not a single design or manufacturing defect was found to be a cause in any of the 203 cases! Yet Beech incurred enormous product liability costs which, out of necessity, have been passed on to our consumers

resulting in decreasing sales. The consequences for us and for the industry are severe and widespread. The following are examples:

- In 1980, Beech employed a total of 7,600 persons in its principal manufacturing facility at Wichita, Kansas. Current employment in our Wichita plant is 4,900.

- 1980, Beech operated manufacturing facilities in Salina, Liberal, Wichita and Newton, Kansas; Boulder and Longmont, Colorado; and Selma, Alabama. The Beech plants in Liberal, Newton, Longmont and Boulder have been closed; manufacturing operations in Selma, Salina and Wichita have been reduced.

- In 1980, Beech manufactured several models of light single-engine trainer and owner-flown airplanes, as well as light-twin aircraft at our Liberal, Kansas plant. With the closing of that facility, the production of these models was suspended, with no short-term plans to resume their manufacture. The reason is quite simple: before the current product liability crisis, the selling price of those small single-engine, owner-flown airplanes was less than the average per unit product liability cost we face today.

- During the past several years, we have lost, with increasing frequency, suppliers of parts, components and systems essential to the manufacture of finished airplanes. In Beech's case, some 100 suppliers are no longer doing business with us. Increasingly, small manufacturers are unable to purchase insurance coverage and they elect either to cease business or eliminate aviation products from their operations. Larger suppliers who

can obtain insurance coverage find that the cost of general aviation product liability insurance is disproportionate to their insurance costs for other products, such as automotive components and parts, sometimes by a factor of several hundred percent. As a result, they are dropping aviation parts and components from their product lines.

o In many instances, alternate sources are not available from domestic manufacturers and we are confronted with the choice of purchasing imported manufactured goods or producing the products in-house at much increased costs. Mr. Chairman, because of this development, we are now actually exporting our technology to foreign nations eager to develop their own general aviation manufacturing capability.

Uniformity and Federalism Issues

The purpose of S. 473 is to establish uniform federal product liability standards for harm arising out of a general aviation accident. The bill would supercede any state law regarding recovery, under any legal theory, for harm arising out of a general aviation accident to the extent that the bill establishes certain applicable federal rules of law or procedure. S. 473 is intended to eliminate forum shopping, whereby plaintiffs file actions in the state which has the laws that are likely to produce favorable rulings or the largest recovery. The bill also is intended to eliminate difficult conflict of law issues which courts must often resolve that materially affect the financial outcome of a case.

The "federally regulated" nature of the general aviation industry justifies its

governance under uniform liability standards. Every aspect of the general aviation industry, except for tort litigation, is federally regulated. An aircraft is federally regulated from its design and production through its maintenance and operation, for as long as the aircraft flies in the federally-controlled and federally-operated air traffic control system. Those involved in maintenance (mechanics and repairmen) and operations (pilots and controllers) are federally licensed and/or federal employees. The federal government investigates all accidents involving aircraft. The federal government also investigates and prosecutes infractions of Federal Aviation Administration rules, within the federal administrative law process.

Congress has previously seen fit to establish federal rules of liability in those industries in which, by virtue of significant federal regulation, there is specific federal interest. For example, the Federal Employers' Liability Act (FELA) governs liability for injuries to railroad employees, and the Jones Act governs liability for injuries to merchant seamen. In the general aviation industry, pursuant to its constitutional power to regulate interstate commerce, Congress may exercise significant authority. Congress has already enacted legislation to "federalize" the remedy system in the railroad and commercial shipping industries. Through S. 473, Congress, quite properly, is exercising similar authority to "federalize" the remedy system of the general aviation industry.

S. 473 provides for concurrent jurisdiction of federal and state courts over claims arising out of general aviation accidents. The bill also provides for removal to federal court of an action commenced in state court, on motion of the

defendant. By creating concurrent jurisdiction, S. 473 avoids criticism leveled against the comprehensive product liability bill, in which federal law is imposed on state courts, but no federal question jurisdiction is conferred.

The criticism of concurrent jurisdiction is that, if all federal district courts and state courts have jurisdiction over general aviation accident claims, it will lead to too many different interpretations of federal law and to a burden on the federal court system. We had hoped, Mr. Chairman, to have some statistical data regarding the percentage of general aviation cases brought in federal court over the past few years, but we did not have adequate time. We would like to provide them for the record.

Under this bill, for the first time, the courts -- federal and state -- would be interpreting the same law, providing for rationality and consistency of judgments and awards. In addition to interpreting the same law, both federal and state courts will have the benefit of a definitive, finite set of regulations on safety standards previously and continually developed by the FAA and National Transportation Safety Board (NTSB) to consider as well. This will certainly help to create a uniform body of law.

Another criticism which has been leveled against S. 473 is that it will create unpredictability because the bill allows the federal court to assert jurisdiction over state law claims in accidents which involve claims both under federal and state law. Critics point out that, in many situations, federal courts now certify state law claims to state courts rather than considering those claims in federal court. There are two good reasons for S. 473's "federal jurisdiction

over state claims" provision. First, consolidating all claims in one case promotes the efficient use of judicial resources. Second, the likelihood of confusion in the courtroom is quite remote, in view of the paucity of cases in which federal and state claims will likely be considered together. It is difficult to comprehend how, as some have suggested, allowing federal and state claims to be considered together will unduly confuse the issues so that claimants have difficulty obtaining a fair compensation.

The survivors of persons killed or persons who are injured as the result of poorly designed or manufactured products should not be without a remedy and no one suggests that they should. But to maintain a system as unmanageable and inefficient as the product liability tort system has proved to be is an extravagance that neither the industry nor the nation can now afford. The present system, which permits and even encourages unrestrained, unjustified and costly litigation, produces exorbitant awards for a few, inadequate awards for some, and no awards at all for many deserving victims who are truly innocent of any negligence or wrongdoing. This is unfair, but it is equally unfair that a large number of people have lost good jobs as the result of this extravagant approach to reparations system which has been largely devised and is controlled by courts, lawyers and insurers.

Some opponents of this bill argue that it is objectionable because it would preempt existing state laws. One only has to observe the widely differing provisions embodied in the various state laws -- no two of which are alike -- to recognize that they all cannot be fair and just. Indeed it is past time for the Congress to establish a federal tort standard that will complement the

extensive and expensive regulatory framework that the federal government has imposed on the general aviation industry. The existing system is simply not working and is destroying an industry in the process.

S. 473 does not offer a perfect solution. There is no guarantee that with its enactment the industry's product liability problems would quickly disappear. But I am sure that some legislative action is absolutely necessary to arrest the runaway liability costs plaguing the industry. This bill is fair to consumers and manufacturers alike. It imposes no caps nor constraints on existing compensation systems. It enjoys a significant degree of support within the Congress and from virtually all of the general aviation consumer groups. We urge this committee's prompt, resolute action to help salvage a domestic industry by favorably reporting this bill.

Mr. Chairman, should the committee wish to review some actual cases which reflect the inequities in today's tort system, I would be happy to provide them for the record or to discuss them with you.

QUESTIONS FROM SENATOR HEFLIN TO GAMA

Answer 1. The liability exposure of the general aviation manufacturers would likely be reduced about 30 to 40 percent if the 20 year statute of repose is enacted. It would take about five years for the full effect of this percentage reduction to take place, because many of the suits brought today result from accidents occurring three to five years ago. There is no typical state statute of repose for general aviation tort actions; a number of states (about 10) have statutes of repose applicable to most manufactured goods. General aviation aircraft are covered by these statutes of repose which prompts forum-shopping by plaintiffs.

Answer 2. The immediate result of enactment of this legislation would not be a reduction in the price of general aviation aircraft. More likely it would be a resumption of production of the smaller sized general aviation aircraft used for training and personal transportation. These aircraft, which must carry a proportionate cost of product liability, have effectively been priced out of the market by this product liability burden. When some control over the cost of product liability is obtained, they would again be able to be produced at prices people can afford. A uniform law throughout the United States and product liability costs more equitably allocated among those responsible for accidents would likely cause the overall product liability costs to go down. As Mr. Martin indicated in his response, over the long term, there would be substantial reduction in product liability costs and hence the cost of new aircraft and parts.

Answer 3. The matter of mandatory insurance is one that needs further review. It appears that if there were adequate insurance coverage for all aircraft, pilots, maintenance personnel and others, individual rates would be lower than they are today. The objective of S.473 is to place responsibility where fault lies. Given this incentive, we believe owners and operators would be more realistic and responsible about their coverage. If this does not work, a mandatory system should be considered further.

Answer 4. The allegation that the state of the art defense reduces an aircraft manufacturer's financial incentive to improve a product is absolutely false. The safety record of general aviation aircraft has steadily improved since 1946. In the '40's, '50's and 60's, product liability was not a concern for the general aviation manufacturer, as it was not a major cost item. For example, in 1962, the cost of product liability insurance for a general aviation aircraft manufacturer was roughly one quarter of one percent of the selling price of the aircraft. For that, the manufacturer was insured against all payouts including defense costs.

During this time, our products continued to improve as a result of the philosophy that has developed within the manufacturing community around FAA's rules which require continuing improvements for safety reasons. If a problem is found, it must be corrected. If a feature of an airplane proves to be safe, it may be retained. FAA's requirements do not consider, as a primary matter, the economics of your business, your customer or your competitor. Your product may appear to be too expensive to justify, but, as long as it is safe, you may continue to build.

What the plaintiffs' bar and the national consumers want and indeed have advocated for years -- successfully in some states -- is to hold the manufacturers to state of the art at the time of the crash, not at the time the airplane was manufactured and sold. If you judge the product by the state of the art at the time of the crash, as plaintiffs advocate, then the manufacturer of a product which is 15 years old has every incentive not to advance the technology because the minute he does he exposes himself to an enhanced set of standards and technological achievements by which his 15-year-old product will be judged.

A few examples should illustrate what I am referring to. The airplanes of the '30's and '40's were fabric covered, tubular designs, almost exclusively with so-called conventional, three point (tail wheel) landing gear. Owners of these fabric covered aircraft had the recurring cost of recovering the airplanes and a greater potential for damage to the fragile cloth covering as compared with aluminum. However, with the care mandated by FAA and with the additional inspections, fabric covered aircraft are as safe as are those covered with aluminum. The tail-wheel aircraft, once you learn how to handle it, can be operated as safely as the typical tricycle gear airplane of today. One is as safe as the other when used under the conditions prescribed by the FAA, even though they reflect different stages in state of the art development.

Answer 5. The drafters of 402A provided detailed written comments designed to explain the purpose and limitations of each section of the Restatement of Torts. Those comments are set out in full in the Second Edition of the Restatement cited

in the question. Among those comments we find the following at paragraph h:

> "A product is not in a defective condition when it is safe for normal handling and consumption. If injury results from abnormal handling, as were a bottled beverage is knocked against a radiator to remove the cap, or from abnormal preparation for use, as where too much salt is added to food, or from abnormal consumption, as where a child eats too much candy and is made ill, the seller is not liable. Where, however, he has reason to anticipate that a danger may result from a particular use, as where a drug is sold which is safe only in limited doses, he may be required to give adequate warning of the danger ... and a product sold without such a warning is in a defective condition."

To the same effect and in subsection n of the comments:

> "On the other hand, the form of contributory negligence which consists in voluntarily and unreasonably proceeding to encounter a known danger and passes under the name of assumed risk is a defense under this section as in other cases of strict liability. If a user or a consumer discovers the defect and is aware of the danger and nevertheless proceeds unreasonably to make use of the product and is injured by it, he is barred from recovery."

In the light of these comments and the overwhelming weight of authority in the strict liability cases that have followed the general adoption by legislatures

and courts of the rule of strict liability, it is simply incorrect to assert, as this question does, that section 402A "does not include any limitation on liability based upon the use of the product." It is equally incorrect to assert that it is "universally accepted" that a manufacturer is liable for any harm arising from "all foreseeable uses." It was foreseeable even to the scholars who wrote 402A that if a consumer opening a Coke bottle hit it against a radiator to remove the cap, the bottle might explode and injure him.

The words "intended purpose" in Section 5(b)(1)(A) exclude deliberate misuse, in violation of FAA rules, of an aircraft. For example, a manufacturer would not be liable if an aircraft was deliberately overloaded by the pilot to such a degree that it crashed. We know that people have deliberately overloaded aircraft but the manufacturer cannot in any way control this action. It is illegal, under FAA rules, for a pilot to overload and operate an aircraft. It is not possible to build an aircraft that could not be deliberately overloaded. Deliberate or illegal misuse is a defense. In aviation, in addition to warnings about misuse that are provided by the manufacturer, there are specific FAA rules incumbent upon the operator of the aircraft that prohibit the kind of deliberate action intended here.

It should be noted that, contrary to claims of opponents to this bill, the words "intended purpose" include "crashing." Proof of crashworthiness, to FAA standards, is required by regulation before an aircraft may be certificated. Clearly, one of the intended purposes of an aircraft is to protect the pilot and other occupants in the case of survivable crash landings. Violation of FAA design and manufacturing standards would, in fact, be negligence per se and would likely lead to large punitive damage awards.

Answers to Questions from Senator Thurmond

By Robert Martin
General Counsel,
Beech Aircraft Corporation

Question No. 1 (forum shopping):

It was one of the objectives of this bill to eliminate, or at least minimize, undesirable and legally questionable forum shopping. Some forum shopping is perfectly legitimate, for example, the plaintiff -- at least in aviation cases -- usually has a choice of jurisdictions in which he could file the action. He certainly has the right to choose the jurisdiction he regards as most favorable. Defendants have fewer opportunities for legitimate forum shopping, but they may legitimately exercise some influence through removal, motions to transfer and consolidatation of multiple cases arising out of the same occurrence. The exercise of these rights of choice by both plaintiffs and defendants will not be unreasonably restricted by the Act.

There are examples of forum shopping which is clearly unethical, if not illegal. The one most frequently encountered in aviation cases is the situation in which the plaintiff chooses a state court that he regards as the most favorable in which to bring his action and in order to prevent a removal of the case to federal court or sometimes even a transfer of the case, the plaintiff joins a local resident, such as a fixed base operator or repair station who really had nothing to do with causing the accident and against whom he has no intention of proving a case. This situation is encountered rather frequently and it imposes expense burdens on innocent parties and sometimes results in a secret collaborative effort between a plaintiff and one or two defendants who are joined to anchor the case in a court of the plaintiff's choice. This kind of forum shopping would be entirely eliminated by the passage of this bill. I see no basis for a belief that S.473 will provide opportunity for unethical forum shopping.

Question No. 2 (liability standards and safety incentives):

I do not agree that S.473 or its House counterpart will have the effect of "relaxing liability standards." The rule of strict liability originally expressed in section 402A of the Restatement of Torts has been carefully preserved, both as to the obligation of a manufacturer to design and actually

build products which are not defective or unreasonably dangerous and to warn against known dangers which cannot be avoided. It is these concepts which legal scholars believed would enhance safety.

What happened in practice, however, was that especially in large, high-dollar cases, which general aviation cases typically are, the courts of a number of states made changes and additions to the basic litigation structure which favored the claimants and disadvantaged the nonresident manufacturer. Quite frankly, in certain jurisdictions it became almost a game in which plaintiffs' lawyers and plaintiff-oriented courts appeared determined to see if they could not bring about changes in the litigation environment, such as the burden of proof, rules of evidence, joint liability without rights of contribution or indemnity, collateral attacks upon FAA certification, and unrestrained use of claims for punitive damage, which would make it virtually impossible for a manufacturer to defend itself and thereby compel manufacturers to pay substantial sums for the settlement of claims which really had no merit.

A primary objective of this bill is to level the playing field in those jurisdictions by the adoption of even-handed federal law which eventually will be applied consistently in all states.

It is not an objective of S.473 to relax the basic concept of strict liability imposed upon manufacturers. This distinguishes S.473 from an increasing number of state tort reform bills which, in some instances, would have the effect of relaxing liability standards. I am convinced that the enactment of this legislation will not cause general aviation manufacturers to be less conscious of safety considerations in either the design or the manufacture of their products, or in the issuance of warnings and instructions where they are appropriate.

Question No. 3 (reduction of product liability costs):

I must answer this question by relying upon data and statistics which Beech has collected and analyzed over the past 15 years. Detailed and specific data from other manufacturers is not available to me or to Beech from which we can make the same actuarial analysis, but from what I do know of the claims-related data and experience of other

general aviation airframe manufacturers, I believe the Beech analysis is representative of the industry.

It is important to understand that the burden which general aviation finds intolerable is imposed not by cases which the industry settles or tries and loses because the airplane actually caused or contributed to causing the accident. Rather, it is the vast majority of cases -- over 80% -- in which the airplane did not actually figure in causing the accident but the manufacturer is, nevertheless, called upon to defend his product.

At the request of the Congress last year, we performed a 4-year analysis (1983 through 1986) of all occurrence and claims litigations against Beech Aircraft Corporation, amounting to 203 occurrence cases. The following data comes from that analysis:

> Of the 203 accidents involved in those claims and litigations, the official government investigation by NTSB and/or FAA did not find a single design or manufacturing defect. The investigations performed by Beech investigators found only 2.
>
> According to the NTSB/FAA investigation reports, the combination of pilot error, maintenance errors, and bad weather made up a total of 161 probable cause findings which did not involve any manufacturer. Beech investigators found a total of 178 probable causes in the category of pilot error, maintenance errors and weather-related accidents.
>
> Notwithstanding these rather startling findings of carefully-performed field investigations and follow on laboratory tests of parts, systems and components to establish that they were functioning properly, the average cost to Beech and/or its insurers of each of these 203 occurrence litigations was $530,000.
>
> A further analysis of these litigations to determine whether, in our judgment, a case would have been brought if the General Aviation Liability Standards Act had been in force at the time these claims and litigations were filed led us to conclude the following: Within 2 to 3 years following the adoption of such an Act, the cost to Beech resulting primarily from cases which should not be filed because they will be clearly without merit would have been

reduced by 25% to 30%, and within 5 years that reduction in product liability exposure for litigations and costs should be cut by eliminating worthless claims and causes by 40% to 50%.

Finally, as I explained at the hearing, Beech is, in effect, self-insured for the first $50 million annual aggregate defense and loss cost and it has been in that position for the last two years. Cessna is uninsured for the first $100 million annual aggregate loss and defense cost, and Piper, we believe, is currently totally uninsured for its product liability exposure. In a normal year, therefore, Beech, Cessna and Piper can expect to pay, from their own resources, 100% of their product liability losses and defense costs. Therefore, the prospective reduction will directly affect the financial statements of the three airframe manufacturers as well as the financial statements of manufacturers of components, such as engines, props, avionics, etc.

Most manufacturers in general aviation have some level of primary self-insured coverage and, like Beech, are able to buy catastrophe excess coverage only in the world market. Because of the instability and unpredictability of aviation product liability litigations in the present tort system, excess coverage is expensive, but it tends to follow, and in our judgment ultimately will follow, the primary self-insured exposure and costs of the manufacturers and as that comes down, the cost of excess catastrophe coverage can be expected to reduce proportionately.

I would like to add one comment to this answer. Beech has believed for several years that general aviation airplanes are price sensitive and that a substantial reduction in the cost of new airplanes will enhance the ability of the industry to market its products in the United States and abroad. Beech ran some marketing experiences with its smaller airplanes in which it sold those products at a loss in order to test the hypothesis. The result was that a reduction of approximately 20% in the purchase price of airplanes did stimulate the market. Since it is unquestioned that there is a unit cost of $70 to $100,000 per general aviation airplane directly attributable to the expense of the industry's product liability exposure, we believe that the enactment of S.473 will significantly help the industry and will reduce the product liability exposure cost substantially, as predicted above.

Question No. 4 (FAA standards and regulations):

The plaintiffs' bar, consumer advocates and even some courts like to say that the FAA standards and regulations are "minimum safety standards." This is not what the Federal Aviation Act requires and it is not what FAA regulations and standards are designed to promulgate. What the Act requires of FAA is the adoption of "minimum standards for safety." The two quoted phrases are not the same and they do not mean the same thing. The last phrase means that the minimum standard must be that required for safety, recognizing that there are other criteria that will affect standards or rules for both design and manufacture of airplanes, as well as rules for the qualification and licensing of pilots and, for example, the handling of air traffic control.

It is my opinion, shared I believe by most of the industry, that in the area of design criteria for general aviation airplanes, the FAA has done a good and creditable job, overall. I believe also that their procedures for manufacturing supervision, although involving cooperation between the FAA and industry, are effective and workable. Recent experience has taught us that the FAA has been doing a very careful and exacting job of supervising the design of new technology airplanes, such as the all-composite Beech Starship. I believe that we can demonstrate to any interested party that the FAA has served the public interest in safety not only well, but vigorously, in its analysis, assessment and required testing of Starship and its new technology.

I believe that no administrative agency and no manufacturer performs perfectly in the adoption of standards for the design and manufacture of a complex product such as an airplane. There have been instances, one for example involving the Beech Bonanza in which a structural flaw went undetected in some models for many years, despite the fact that both FAA and the manufacturer developed programs for repeated testing of the airplane and its structure.

Against this background, it is my opinion that the great bulk of FAA regulations and standards for the design, manufacturing and testing of general aviation airplanes are adequate from the standpoint of safety and the public interest, but there have been exceptions and there will always be exceptions. S.473 has been carefully drafted to preserve the right of courts to insist upon a higher

standard where that is necessary and the current state of the art permits the design or manufacture of a product which is better and safer. Shortly stated, where higher standards are appropriate, the courts will remain free to impose them under the rules of strict liability. Compliance with FAA standards is not an absolute defense under S.473; compliance is only admissible in evidence with regard to whether the product is defective and unreasonably dangerous. Section 5(c)(2). This is now the rule in most jurisdictions.

Respectfully submitted,

RM:cj

Senator HEFLIN. Senator Metzenbaum, do you have an opening statement?

OPENING STATEMENT OF HON. HOWARD M. METZENBAUM, A U.S. SENATOR FROM THE STATE OF OHIO

Senator METZENBAUM. Yes, and I think I would like to make it because I am going to have to leave for another hearing.

I have a strong interest in this subject. Part of my concern has to do with whether or not we ought to attempt to federalize one body of law having to do with a limited area.

The question seems to me to be rather apparent that if we are going to have a Federal system of tort law, then any reforms ought to be across the board because there certainly are other claims and concerns made by those who are defendants in all types of product liability cases.

I myself do not support the point of view that State tort law should be preempted by Federal law. I believe that over a period of time, the State legislatures and the courts have been able to deal with this subject adequately and well.

Now, I understand the concern that has been evidenced by the airplane manufacturers and their concerns about cases that have to do with sales made 15, 20 years ago. One of the things that I think we have to talk about is the reason for your high expenses directly related to the cost of the insurance, and the more basic question, whether that insurance is correctly priced.

Now, there is no competition in the insurance industry, and that is the reason I have attempted by other legislation to eliminate the McCarran-Ferguson Act defense so that insurance companies may not combine to set rates.

But as much as we try—and you may have the answer to this, members of the panel—I cannot find the basic underpinning for

the high rates that are being charged. They may exist; if they do, they have not been presented to me.

High rates have been brought to my attention, but not the basis for those high rates. And as we know, that is a continuing question. We know that the attorneys general of 19 States have brought suit against the insurance industry, or a substantial portion of the insurance industry, claiming that there is a conspiracy, a conspiracy to withhold the availability of certain insurance.

So I believe, Mr. Chairman, that the subject we are dealing with is deeper and more complicated than just saying that we should pass a piece of legislation because of the high costs that the aviation industry is suffering at the moment.

I thank you, Mr. Chairman, for the opportunity to make these observations at this point. I may put a longer statement into the record. Thank you, sir.

Senator HEFLIN. All right, sir.

Mr. Yodice.

STATEMENT OF JOHN S. YODICE

Mr. YODICE. Thank you, Mr. Chairman. With your permission, I will submit my written testimony for the record.

Senator HEFLIN. Without objection, it will be admitted.

Mr. YODICE. And then with your further permission, I would like to summarize that testimony and then be happy to respond to any questions you may have.

I am here representing the Aircraft Owners and Pilots Association, which is an organization of some 265,000 aircraft owners and pilots, and we estimate that our members own two-thirds of the general aviation fleet and do approximately three-quarters of the flying in general aviation.

So, essentially, we are a consumer organization, and as a consumer organization we have interests on both sides of the product liability debate. We have an interest in ensuring fair compensation to our members who may be victims of air crashes which result from defective aviation products.

On the other hand, we have a concern about the availability at reasonable cost of general aviation products, and I think as you have heard and you will continue to hear, the cost of product liability in general aviation has been escalating at a phenomenal rate. We are now at the point where, on an average, the product liability cost of a new aircraft is on the order of $70,000 per aircraft.

As consumers, we know—we do not delude ourselves—we know that we pay the costs of product liability in the prices that we pay for general aviation aircraft. We also know that very little of what we pay for product liability cost is ultimately getting to the victim of air crashes.

We have heard varying estimates, but they all hover around the order of 20 percent, and that is an inefficient system, an inefficient compensation system for victims of air crashes.

That being so, we feel there is an opportunity here to address some of the concerns with the present product liability system and, at the same time, preserve the compensation system for our members.

We have worked with the general aviation manufacturers and with the Congress and produced what we believe is a balanced bill, one that does address some of the concerns and one that nevertheless preserves a fair compensation system for our members.

If I may just allude to one point in my printed testimony, while I am here representing the Aircraft Owners and Pilots Association, I think it would be important for the committee to know that there is an organization called the Coalition for General Aviation Liability Reform, and that coalition, I think, runs the spectrum of the whole general aviation community and includes the Experimental Aircraft Association, the National Aeronautic Association, the National Business Aircraft Association, the National Agricultural Aviation Association, the National Air Transportation Association, and the Helicopter Association International.

I think it is fair to say that each of those organizations shares the views that I am expressing to you today and supports this legislation.

[The prepared statement of Mr. Yodice follows:]

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STATEMENT OF JOHN S. YODICE, GENERAL COUNSEL

AIRCRAFT OWNERS AND PILOTS ASSOCIATION

HEARING ON

S.473, GENERAL AVIATION
ACCIDENT LIABILITY STANDARDS ACT OF 1987

BEFORE THE

SUBCOMMITTEE ON COURTS AND ADMINISTRATIVE PRACTICE

JUDICIARY COMMITTEE

U. S. SENATE

June 21, 1988

TESTIMONY

My name is John Yodice, and I am General Counsel to the Aircraft Owners and Pilots Association. We appreciate the opportunity to appear before you in support of S.473, the General Aviation Accident Liability Standards Act of 1987.

The Aircraft Owners and Pilots Association is a nationwide nonprofit membership association of some 265,000 individual aircraft owners and pilots. We estimate that our members own approximately two-thirds of the active general aviation aircraft in the United States, and do seventy-five percent of the flying.

AOPA is essentially a consumer organization. Our members have interests on both sides of the product liability debate.

On the one hand, we are the probable victims of any air crashes which are due to defective general aviation products. As such we have an interest in ensuring that there be a fair compensation system for persons so damaged.

On the other hand, we have an interest in the availability, at reasonable cost, of general aviation products. It is apparent to us that many manufacturers and suppliers are curtailing production and even getting out of the general aviation business principally due to product liability concerns. Furthermore, we are very much aware that we pay the product liability costs in the prices of the aviation products that we purchase.

In 1987 there were only some 1,085 new aircraft sold in the United States. This is a drop from some 17,000 sold in 1979. At the same time, according to the manufacturers, product liability costs rose from $24 million in 1977 to $209 million in 1985. This

year they expect the number of new aircraft sold to continue to decline, and the product liability costs to continue to increase.

We have heard a good deal of discussion about whether there really is a problem, and if so, who is to blame. There has been a good deal of finger-pointing: "avaricious plaintiffs' attorneys," "profit-hungry insurance companies," "uncaring manufacturers of lousy products," and the like. To the consumer, this finger-pointing exercise is irrelevant. If the manufacturers perceive a problem and begin withdrawing from the manufacture of aviation products, if new entrants are deterred from the market place because of a perceived problem, if insurance companies are unwilling to write coverages or must charge premiums too expensive for the manufacturers because of a perceived problem, then it is not important whether the problem is real. The perception is real. And the unavailability of aviation products is real.

With respect to costs, we have been made aware that our system for compensating victims is very inefficient, giving the victim or his survivors very little of the money paid into the system. Most of the money is absorbed by the system in the costs of prosecution and defense. Since the consumers ultimately pay the cost of the system, to the extent that we can help make the system more efficient, we should benefit from lower prices.

It is this interest in cost and availability which distinguishes us from the other "consumer groups", which include the broad based public interest groups and the organized plaintiffs' bar. We believe ours is the more balanced consumer perspective. These groups are interested in the broad subject of product liability and tort reform, but they evidence little, if

any, concern about general aviation or its problems. Specifically, and importantly, they are never heard to complain of cost or availability of aviation products. We share their concern for the rights of victims. We regret their narrow focus on this concern to the complete derogation of the other concerns of general aviation consumers.

AOPA is not alone in its views. There are other aviation associations which, to varying extents, may properly be considered to represent the interest of consumers. There is the Experimental Aircraft Association, the National Aeronautic Association, the National Business Aircraft Association, the National Agricultural Aviation Association, the National Air Transportation Association, the Helicopter Association International. Each of these organizations, I believe, shares the views I am expressing to you. They, along with the General Aviation Manufacturers Association, have combined to form a Coalition For General Aviation Liability Reform to support the Federal legislation such as S.473. They, too, distinguish themselves from the other consumer groups who have little concern for the health of the general aviation community, or the cost and availability of general aviation products.

In defining the interests of our members, we, of course, have relied heavily on the views of our members. (The only dissenting views have been from some of our members who are plaintiffs' attorneys) But, in building on the views expressed by our members, we have acted as a catalyst in providing a forum for the expression of the views of all interested aviation segments. In April of 1986, AOPA conducted a product liability symposium which

solicited these views. In May of 1987, AOPA conducted a parts availability seminar, which, though not specifically directed, quickly focused on product liability concerns as a root cause of the burgeoning parts problem.

The general consensus of these sessions seemed to be that it is appropriate to consider Federal legislation confined only to general aviation. Federal legislation is appropriate because aviation is an activity which is already intensely regulated at the Federal level with very little regulation at the local level. General aviation, at the Federal level, is probably the most intensely regulated of any private activity in this country. Every aircraft is certificated, maintained and operated to Federal standards. Every pilot is trained, certificated and operates to Federal standards. The Federal government regulates the navigable airspace and operates the air traffic control system. The Federal government investigates aircraft accidents, determines their causes, and makes safety recommendations based on these investigations. It's a short step to have Federal law control liability arising out of general aviation accidents.

And, the consensus to confine the legislation to general aviation seemed to be because the prospects are better for such legislation than for more generalized tort reform.

In approaching reform we, as a consumer organization, start with three premises. First, reform is happening and we need to be involved in it to be sure it does not become draconian, and that when all is said and done, our members will have a just and fair compensation system. Second, that we the consumers pay the product liability costs in the prices of the aviation products

that we buy. And, third that the present system is inefficient, giving only a small portion of the amounts spent on product liability to the victims, leaving quite a bit of room for improvement.

So, we have become involved. We have attempted to work with the general aviation manufacturers and others who are attempting this reform. It has been a good faith give-and-take effort. We are especially proud that this legislation does not seek to impose some of the more draconian reforms which have been considered, such a limitations on non-economic damages and punitive damages, restrictions on attorney's fees and the contingent fee system, and the like.

While there are some differences in the House version, H.R.2238, and S. 473, AOPA is optimistic a reasonable compromise can be worked out before the end of the 100th Congress.

In conclusion, we would like to thank the Subcommittee for the opportunity to appear here today in support of S.473.

Senator METZENBAUM. Mr. Yodice, as you know, I asked the question whether liability insurance should be as high as it is. Have you seen any backup information as to the insurance companies' costs or claims paid out as compared to premiums paid in?

Mr. YODICE. Senator Metzenbaum, I think Mr. Martin would be in a better position to respond, but I have had an opportunity to hear him testify before where he has shown what the actual costs of product liability have been, and they are on the order of 210 million.

Mr. MARTIN. 210 million in the last full year that we have figures for.

Senator METZENBAUM. That does not tell us much unless we know how much the premiums have been.

Mr. YODICE. Well, if the premiums are to cover the losses, we are still back on the order of $70,000 per aircraft for product liability cost, and I do not see an insurance company being an eleemosynary institution. I would assume that they are going to charge premiums which would provide for a fair profit as well as the cost of the product liability system.

Senator METZENBAUM. The $70,000 relates to the premium, does it not? It does not relate to the expenses paid out to the victims?

Mr. MARTIN. Yes, it does.

Mr. YODICE. As I understand the way the $70,000 was computed, they looked at the total costs of the remuneration of victims as well as the costs of defense and costs of prosecution, and then divided that by the number of aircraft manufactured in that year.

Is that correct, Bob?

Mr. MARTIN. That is correct. I can respond very quickly to Senator Metzenbaum's inquiry, but I do not want to go out of turn.

Senator METZENBAUM. Mr. Martin, would you respond?

Mr. MARTIN. Yes, sir.

Senator METZENBAUM. I am interested in the basic amounts paid out by the insurance companies.

Mr. MARTIN. All right, sir. The first thing that we have to understand is that in today's world the manufacturers are basically uninsured and uninsurable. The conventional markets for product liability coverage have withdrawn their coverage.

Now, to give you precise facts, today, as we sit here, Beech has coverage in the world market starting at $50 million annual aggregate. Below that, Beech is, in reality, self-insured, although Beech has an insurance company which it owns and into which it pays premiums in order to keep track of its losses, and so forth. But, basically, it is uninsured for the first 50 million.

Cessna is uninsured for the first 100 million. Piper is totally uninsured. I do not know what the figures are for Learjet, as an example, but those three are the big ones. Now, our losses in a given year will not reach 50 million; they will reach a level someplace between 15 and 20 million, but we pay all of that.

Now, we buy excess coverage so that if somebody puts one of these airplanes into Yankee Stadium when it is full and we are looking at a $200 million lawsuit, we have not bet the farm.

The premiums in that area are higher, I think, than they should be for the risk, but it is not a significant part of the overall burden. I think probably—I do not know what Cessna is paying for its

excess coverage, but we can pay those costs and, with some stability, those costs will come down. But in the case of our industry, this is not really an insurance problem.

Incidentally, I share your views about the repeal of the McCarran-Ferguson Act, but it is not impacting general aviation and never has because aviation insurers are not within McCarran-Ferguson, as I think Congressman Glickman made clear.

Senator METZENBAUM. How does the $70,000 figure—how do you arrive at that figure?

Mr. MARTIN. We arrive at that figure by figuring the costs that the manufacturers pay out out of their own pockets for the uninsured primary layer for defense and losses, and premiums that they pay for excess insurance, both sets of costs. The excess premiums are probably 25 percent of the total.

Senator METZENBAUM. Would you want to make available to this committee a breakdown of how the industry arrives at its costs in this area?

Mr. MARTIN. Yes, sir.

Senator METZENBAUM. Breaking it down into amounts paid out for claims, amounts paid to your own counsel and your own expenses, and the costs of excess insurance.

Mr. MARTIN. I can give you the percentages at the present time.

Senator METZENBAUM. Go ahead.

Mr. MARTIN. The costs of defense—that is, costs that you incur in settling claims, managing litigations, and so forth—run about 40 to 50 percent of the total, and the balance is losses paid. And those are Beech figures, but I think they are representative of the industry.

Senator METZENBAUM. Thank you. Thank you, Mr. Chairman.

Senator HEFLIN. Since you have already questioned the two on the opposition, maybe it would be appropriate to ask the proponent some questions right now.

I read this bill and I am seriously concerned about how it would affect Alabama in regard to wrongful death. Alabama is one of maybe—I do not know how many other States—maybe one or two or three States, that has had the law in its wrongful death statute interpreted to mean that only punitive damages are recoverable.

I was on the Commerce Committee when we discussed general tort reform, product liability and other things, and brought this out and thought we had reached some sort of agreement.

This appears to me to be an effort to go beyond and behind what had been. Now, that was on general tort liability, but what this language says is that in those States where the statute provides, or where it has been construed to provide for damages only punitive in nature, "a defendant may be liable for any such damages pursuant to the provisions of this Act, regardless of whether a claim is asserted under this section."

Under this, recovery would then be limited only to conduct on the part of an aircraft manufacturer manifesting a conscious, flagrant indifference to the safety of others. It would mean that no negligence claim, as the other provisions provided, could be applicable to Alabama or people who were killed.

It would mean that where you have the restatement of the law's provision, you could have a situation in which a person was injured

and a person was killed in the same plane. The standard of conduct on the defendant would be negligence relative to the person with personal injury who was not killed, and would be conscious, flagrant, willful, and intentional to the person that died.

It just seems to me that this is an effort to eliminate any recovery from anyone relative to Alabama wrongful death.

Mr. MARTIN. Do you want me to respond to that?

Senator HEFLIN. Yes, sir.

Mr. MARTIN. The intention of the drafters of this bill was not to do what you have just outlined.

Senator HEFLIN. Well, that is what it does.

Mr. MARTIN. Well, I do not know. I did not draft this section and I have to confess that it is a little murky, and I would——

Senator HEFLIN. It is not murky when it says that it shall be liable for any damages pursuant to the provisions of this act, and when you limit it to punitive damages, it has to come under the punitive damage——

Mr. MARTIN. What this bill is intended to do, and what I believe that section does—and if it does not do it, it should be squared around so that it does—is this: As to citizens of Alabama or anyone who has rights under the Alabama laws, if they are killed or injured in a general aviation accident, their rights are controlled by this bill and they would be entitled to recover just as a citizen of any other State would recover; that is, they can recover compensatory damages on the theory of strict liability in tort.

If there is proof of willful and wanton conduct, then they would be entitled to recover punitive damages, but they would get punitive damages when anybody else from any other State could get punitive damages. That is what is intended.

Senator HEFLIN. Well, I do not think that is what it says. That seems to me to be a matter that from my viewpoint has got to be corrected.

Mr. MARTIN. Well, frankly, I am not the expert in legislative drafting and I defer to those where you get into those kinds of questions, but as a practicing lawyer, I am inclined to agree with you. That section is, as I said, a little murky.

I know what the intent was and I know what they were trying to do, and if they did not do it, it ought to be corrected. But I want to make it clear to you, Mr. Chairman, that as to Alabama, those citizens would have exactly the same rights under this bill that a citizen of any other State would have, bound by the law of any other State.

Senator HEFLIN. All right, sir. Now, since the Department of Justice issue has been raised and that sort of thing, and you mentioned some of it, they mention that one of their objections is the extensive expansion of the Federal district court jurisdiction provided by section 13 is certain to place a considerable additional burden on the Federal system.

Now, this is different in that you do have concurrent jurisdiction relative to Federal and State courts, but you allow a right of removal to the Federal courts by the defendant at his option.

Now, there is considerable movement that has been going on, and I think there is considerable movement right now, to raise the diversity limits to either 50 or $100,000 from what they are now,

which could mean that a good deal of cases, particularly property damage and things of that sort in aviation matters, would be there.

What is the justification for placing this additional burden on the Federal courts?

Mr. MARTIN. Well, the justification, Mr. Chairman, is that if this act is adopted, the liability of the parties involved in the general aviation accident litigation are controlled by Federal law. So, as is the case with respect to other Federal laws that are the dominant law, you have Federal question jurisdiction.

But I hasten to point out to you that this supposed burden is really not very much of a burden. About 20——

Senator HEFLIN. Well, you know, they are the ones that said that—this is the Department of Justice that says it is a considerable burden. I am just quoting them.

Mr. MARTIN. I am saying to you that they just did not have the figures. They could have gotten them, but they do not have them. There are about 220 of these cases filed a year, on the average year, maybe 225, and a fourth of those are already in Federal court, in round numbers.

So you are talking about a burden of three-fourths of 220 cases a year. You have got 540 Federal district judges; that is about a third of a case a year per judge. It just does not amount to anything when you talk about the Federal docket.

And my view is that this eventually, stabilizing the litigation environment, will probably lead to a decline in the total number of lawsuits filed, and I do not think this is going to really work any burden on the Federal courts at all. Justice just has not looked at the numbers. I would be glad to supply them to them.

Senator HEFLIN. Well, your numbers of cases is certainly a very logical and good argument, but the average aviation case usually takes a considerable amount of time as opposed to the normal case that comes into the Federal court.

Sometimes you get into the multidistrict-type litigation that is involved in this where it occurs in various places. I mean, I would assume not just the number of cases, but that is what they may be speaking about relative to that.

Now, let me ask you this in regard to the somewhat—it does not exactly raise it, but it brings it up. In reading this bill, does it cover the military aircraft, the helicopters that are purchased by the Federal Government and the military aircraft that is purchased, and all government aircraft that is purchased?

The suits against the manufacturers of those—the defendants would be covered under the provisions of this law? There is no distinction?

Mr. MARTIN. For those airplanes that are general aviation airplanes, yes.

Senator HEFLIN. Well, most——

Mr. MARTIN. Most of them are.

Senator HEFLIN. Most helicopters hold less than 20 passengers.

Mr. MARTIN. Beech and Cessna and Piper, so far as I know, do not make any offensive airplanes. We do not make any gun-mounted or bomb-carrying airplanes. Our airplanes are used for training and for transportation, and they are for the most part off-the-shelf airplanes and they are covered.

If a general aviation manufacturer makes a helicopter gunship that is a special Defense Department item, I do not think it would be classed as a general aviation airplane and it would not be subject to the bill.

But if they are training pilots in a Beech Baron, which is one example, yes, they would be covered; that is, they would be governed by this act. That, again, is not a large group of accidents; Beech has maybe one or two a year of government-owned airplanes.

Senator HEFLIN. I did not understand.

Mr. MARTIN. What I am saying is that in terms of the crash of government-operated airplanes, military trainers, and so forth, we will some years not have any crashes. One year, we might have one or two.

So what I am saying is of the total number of potential litigations, it is minimal in the government-owned airplanes.

Senator HEFLIN. I do not know how many government airplanes there are compared to the others, but——

Mr. MARTIN. A very small percent.

Senator HEFLIN. A very small percentage. I know there are an awful lot of helicopters. I have got them down in my section of the country. We have got Fort Rucker, so maybe that is just more.

Mr. MARTIN. The helicopters may be different, sir.

Senator HEFLIN. The helicopters, in other words, might be different in regard to percentage of the overall——

Mr. MARTIN. Yes, sir.

Senator HEFLIN. Who makes helicopters, primarily?

Mr. MARTIN. Bell and Boeing make them; Hughes used to make them.

Senator HEFLIN. All right, sir.

Mr. Hvass, I believe we will go ahead with you.

STATEMENT OF CHARLES T. HVASS, JR.

Mr. HVASS. Thank you, Mr. Chairman.

My name is Charlie Hvass, Jr. Just by way of introduction, I am the former chairman of the Association of Trial Lawyers of America Aviation Section. I am a pilot; I am a user of airplanes. I have seen the impact of aircraft crashes not only on my clients, but also upon my own family.

I want to start out by saying that the premise for this bill that has been presented to you is wrong; that is, it is not the cost of products liability that has been harming the general aviation industry.

A gentleman by the name of Kraus from Cessna Aircraft Co. presented a paper last year to the American Institute of Aeronautics and Astronautics. He was talking about why the decline in general aviation sales.

His conclusions as an engineer in the industry are that the reasons are institutional and involve the aviation environment more than the airplanes; low corporate profits and profit ratios; stiff airline competition; low air fares; competition from other up-scale options, such as boats and cars; growing government regulations that limit access to major terminals; complex air space and regulatory environment; disorganized and expensive training; frustrations

with maintenance; and the popular image of general aviation aircraft as unsafe and frivolous.

Mr. Kraus, is a Cessna engineer, concluded that the reason for decline of the general aviation industry was that they were not offering to the public what the public wanted. There is one line in this entire report, unsupported, talking about products liability, and only one line.

The reasons that the industry is in trouble, as outlined by Mr. Kraus, have nothing to do with the cost of insurance or the cost that insurance puts on each airplane.

I have been dealing with the issue of products liability generally since 1975 when I began working with the Minnesota Trial Lawyers Association, and I want to point out a couple of other underpinnings.

We do not have any data to tell us what money is going to be saved by the general aviation manufacturers if this bill were to pass because they do not know and they cannot tell us, and no manufacturer has ever been able to tell us what they are going to save if a bill like this were to become law.

We do not know what the savings to the consumers are going to be. We do not know if there is ever going to be a saving to the consumers if this bill were to become law. We do know, and I am going to talk about some specific cases, that there will be harm to people that fly in general aviation aircraft, and let me give you some examples.

Under this bill, at section 7, there is a 20-year statute of repose; that is, 20 years after an airplane is sold to the public there can no longer be a claim on it. No manufacturer now says to the public our airplanes are only safe for 20 years. They are not life-limited to 20 years by the FAA. If the airplane is not safe enough for the manufacturers to back after 20 years, why is it safe enough for the public to keep on flying it?

An example of this is the Cessna 411, a twin-engine aircraft built by Cessna, most of which are now 20 years old or older. I was local counsel in a case involving the Cessna 411. It has been involved in a number of crashes.

When you lose an engine on a twin-engine airplane, it is supposed to be able to fly. By so much rudder force and so much seat deflection, the pilot is supposed to be able to keep control of the airplane.

When it was tested by a plaintiff's lawyer and a test pilot, we discovered that the airplane did not meet the federal aviation regulations when it was built. Cessna hired a test pilot to fly the airplane to show that the crash did not occur because of the single-engine characteristics. That test pilot hired by Cessna crashed the airplane.

The Cessna 411 would be prevented—we could not bring a suit even though we can show it did not meet the regulations in effect at the time it was built.

The Piper Cheyenne is another example. The FAA does not test for certain pitch propensities of aircraft. The British civil aeronautics group does. In Great Britain, they refuse to certify the airplane, rejecting as unacceptable the Piper Cheyenne's handling characteristics.

When there was a crash in the United States, the plaintiff's lawyer was able to get a hold of the British test pilot report and the case was ultimately settled.

Another example is the Beechcraft Bonanza, a V-tailed airplane that had a propensity for breaking up in flight, and it was always Beech's claim that it was the pilot's fault even though in 1956 there were memos circulated at the governmental level showing that it was a problem with the design of the tail.

A jury in 1985 told Beechcraft, fix the V-tails, and ultimately the V-tail was fixed and there was a governmental study at about the same time. But the 20-year-old airplane—in fact, it was a 1956 airplane that was involved in the case that finally got the Bonanzas fixed. And I will say, to Beech's credit, they ultimately did fix them. But that is an example of what is wrong with the 20-year statute.

Punitive damages was asked about. Cessna has a problem with its seats. It is very exciting to be taking off in a single-engine airplane when suddenly your seat comes loose and you go sliding to the back of the cabin. You either let go of the controls while you are taking off and have problems getting the controls back or you continue to hang on and you crash the airplane.

It was not until there was a punitive damages award by a jury telling Cessna, fix the seats, that something finally got going to fix those Cessna seats. Under this bill, the ability of that jury to tell Cessna, fix the seats, would have been limited.

We talk about the problems of strict liability under section 5, and there is a change in the wording in section 5. They talk about the intended purpose, the intended use of the airplane.

The biggest area we have problems with these airplanes, Mr. Chairman, is when they crash. You are better off in your car. Your car has a padded dash, your car has stronger seats, your car has stronger seatbelts than you get from a general aviation manufacturer because the FAA regulations are stuck back in the 1940's. They do not meet what we know from Professor Snyder and others as to crashworthiness in the 1980's. We do not find those airplanes being built.

And under this definition, the intended use of an airplane is not to crash.

Now, Mr. Martin has told me before that it was not their intention to cut out crashworthiness, but just like the problem you have with punitive damages, as I read this bill, it cuts out a claim for crashworthiness.

Another example is an absolute defense provided in the bill where we have airworthiness directives or service bulletins. Now, an airworthiness directive is issued by the FAA and it says to a pilot or an owner, fix the airplane, and service bulletins issued by the manufacturer.

The problem we have with this bill is that those costs are not necessarily borne by the manufacturer, and a manufacturer could put out an airplane with a defect in it, but then say to the consumer, fix it at your expense and if you do not, we are not going to be responsible for the crash.

Senator HEFLIN. You know, while you are right there, we have got a vote on. I am going to have to call a recess to go vote and

then come right back, so if we can interrupt your testimony, thank you.

[Recess.]

Senator HEFLIN. Mr. Hvass, I believe you were in your testimony. You may continue.

Mr. HVASS. I am just about done. Thank you, Mr. Chairman.

There are two points I would like to make in conclusion. One is that the insurance question—I always assumed that when a manufacturer built an airplane, they saved something out of the profits from that airplane to pay for the product liability costs on that airplane over time.

What we are now hearing is that the premiums are being paid out of this year's sales, or the costs are being paid out of this year's sales, instead of saving profits from the time when they built 18,000 airplanes.

The second has to do with the wording in this particular bill and, Mr. Chairman, you raised the question concerning the effect on Alabama law. Mr. Martin and I talked about this bill a week ago. We were at loggerheads as to whether or not it got rid of the implied warranties that exist in all 50 States under the Uniform Commercial Code. He said that this bill would not; I said it did. There is a problem with the drafting there.

There is a question about whether——

Senator HEFLIN. Well, that was the question that I had, too, in my mind, if it eliminates the State law on implied warranty.

Mr. HVASS. Exactly, and that is a problem I have with the bill, and another problem is exactly what it does with the issue of crashworthiness, and the other issue is what exactly does it do with negligence in the field generally, especially with respect to manufacturers.

Because of the drafting problems with this bill, I think it needs a substantial amount of work before it goes anywhere to make sure that this murkiness is not left in the bill, because murkiness should not exist in a bill where we are talking about the rights of people that are flying in these general aviation aircraft on a day-in, day-out basis.

Thank you.

[The prepared statement of Mr. Hvass and additional material for the record follow:]

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STATEMENT OF -

CHARLES T. HVASS, JR., ESQ.

BEFORE

SUBCOMMITTEE ON COURTS AND ADMINISTRATIVE PRACTICE

OF

THE SENATE JUDICIARY COMMITTEE

June 21, 1988

Mr. Chairman and Members of the Committee, I am Charles T. Hvass, Jr. I am a partner in the Minneapolis law firm of Hvass, Weisman & King. I would like to thank you for the opportunity to testify and present my views on S. 473, the General Aviation Standards Act of 1988. I am former chair of the Aviation Section of the Association of Trial Lawyers of America and an active pilot. My perspective is different from many who are appearing before you because I testify from the standpoint of having witnessed the impact of aircraft accidents on my clients as well as my family.

I also come before you as one whose involvement in the litigation system has exposed me to the actions of those who through this legislation seek refuge from those actions. I would urge that the aid they seek not be given.

S. 473 would supersede any state law regarding matters covered by the bill. All of those matters - tort law issues regarding recovery for harm - historically have been reserved to the states.

It is ironic and misleading that the justification for Federal involvement is what the bill terms the Federal government's "comprehensive system for regulating general aviation." It is ironic because many of the proponents of this legislation are the very folks who have traditionally (and in many cases successfully) opposed tough, comprehensive regulation

by the Federal Aviation Administration. These same people are now seeking to hide behind that limited regulation as justification for passing a statute to avoid liability for injuries caused by defective aircraft. It is misleading because while proponents of this bill cite that FAA's responsibility for establishing aircraft design, construction and certification standards and standards for maintenance, inspection and repair, they fail to cite what they know is also true: that the Federal Aviation Act of 1958, by its very terms, specifically requires that agency to set only minimum standards. Minimum standards do not necessarily establish an acceptable level of safety. Quite simply, the Federal regulatory structure as it relates to the general aviation industry does not justify enacting a relaxed liability standard.

To compound the matter, as the U.S. Supreme Court recently noted, the FAA by regulation has authorized the applicant itself to conduct the inspections and tests necessary to determine that an aircraft comports with FAA airworthiness requirements . .. With fewer than 400 engineers, the FAA obviously cannot complete (the) elaborate compliance review process alone. Accordingly, 49 U.S.C. Sec. 1355 authorizes the Secretary to delegate certain inspection and certifications responsibilities to properly qualified private persons. By regulation, the Secretary has

provided for the appointment of private individuals to serve as designated engineering representatives to assist the FAA inspection process. 14 CFR Sec. 183.29 (1984). These representatives are typically employees of aircraft manufacturers who possess detailed knowlege of an aircraft's design based upon their day-to-day involvement in its development." (U.S. v. S.A. Empressa De Viacao Aerea Rio Grandense Variq. 104 S. Ct. 2755, 2761 (1984) (See also 14 CFR Secs. 21.33, 21.35 (1983).

This involves a significant degree of self regulation by the industry. It hardly provides a fair and rational basis for preempting existing state tort standards in favor of a reduced federal liability standard governing actions against manufacturers of general aviation aircraft. The certification of general aviation aircraft involves the FAA and the manufacturer. No consumer has a role in the process. The FAA, understaffed as it is, cannot hope to conduct its own tests of new aircraft types. As a result, aircraft are certified when the results of tests performed by the manufacturer are submitted either directly to the FAA or to a designee of the agency.

The regulatory standards which the aircraft must meet are minimums. They are often antiquated. In some instances, the standards are based on technology dating back to the 1940's. There is no governmental incentive for manufacturers to surpass

them. There are few marketplace forces for manufacturers to surpass them. The primary incentive to build safe airplanes which meet today's technology is coming from the civil liability system.

Let me share some examples.

"In 1929, Lieutenant J. H. Doolittle stated, 'a feature to which insufficient attention is given is designing and constructing an airplane so that it crashes well. This sounds odd, but many lives have been saved because the cockpit was strong and there was sufficient material between the pilot and the ground to absorb the shock of crashing.'" Saczalske, Aircraft Crashworthiness, University of West Virginia, 1965.

Up until 1978, the FAA did not require shoulder harnesses for general aviation aircraft. They were optional, even though the safety aspects of shoulder harnesses were well known. I represented one individual who lost an eye in a crash in 1978. He would have been unharmed had the aircraft been equipped with shoulder harnesses.

Before you think that the crash was severe, I should tell you that the plane was repaired and went back to flying.

Unfortunately, under the legislation that is before the Committee, the incentive to improve crashworthiness will be blunted. As indicated above, the bill would require juries to evaluate aircraft according to standards that often are decades

old because many aircraft left the manufacture's hands that long ago. Moreover, the change in the liability standard from foreseeable use under current law to "intended purpose" under Section 5(b)(1)(A) will allow manufactures to state that even though they knew aircraft would crash, they did not "intend" that they crash. Generations of pilots and passengers will be condemned to 1940's technology beyond the year 2000.

The system of certification, which allows the manufacturer virtually complete control over the testing and certification of airplanes, is flawed beyond the inadequacy of the safety standards in the regulations.. A Cessna 411, a twin engine airplane, crashed just after takeoff in Richfield, Minnesota, after an engine failed. As part of the litigation, Cessna hired a test pilot to fly an identical aircraft to show that even with an engine failure, the airplane could be returned safely to the airport. This was intended to prove that the aircraft was properly certified by Cessna.

When the Cessna pilot intentionally failed one engine, he lost control and crashed. He survived; the passengers in the original crash did not.

Testing done by Cessna and the plaintiff's expert indicated that 270 pounds of pressure was necessary on the rudder pedal to keep the airplane under control after loss of one engine. The FAA regulations call for a force of just 150 pounds of pressure.

For some reason, in the certification process, the fact that the Cessan 411 did not meet the regulations "slipped by," thereby permitting an aircraft to be built that did not meet the minimum regulation for single engine safety.

When the Aviation Consumer Magazine examined the safety record of the Cessna 411, they found it was so bad that the aircraft should be grounded. Aviation Consumer, December 1, 1985, p. 30. Under the bill now before you, Cessna would face no liability for these aircraft, even though they do not meet the regulations under which they are certified. The aircraft are now approaching twenty years of age, a complete defense under S. 473.

The Piper Cheyenne, a popular turboprop, provides another example of why FAA regulation cannot serve as the premise for shielding manufacturers from liability. When tested by the British Civil Aviation Authority, the airplane was found to be so unstable in pitch that the test pilot said it was "so extreme that we just did not belive it could possibly be true." Aviation Consumer, Feb. 15, 1986, p. 7. The FAA has no regulations governing dynamic pitch instability, so the aircraft is certified here. The British CAA refused to certify the aircraft.

ATLA believes that S. 473 would unfairly and without just cause tilt the balance even in meritorious product liability lawsuits in favor of defendants. The bill would make it more difficult for injured victims to prove their case.

Earlier this year, a member of our Association who is familiar with general aviation litigation prepared a letter which summarized a number of ATLA's concerns with the liability standards proposed by this legislation. It is worth quoting from part of that letter here:

"(The bill) would inject negligence into strict liability doctrine by allowing defendants to evade liability where the product conformed to the "state of the art" as defined by what was reasonably feasible in light of existing technology. Even when a plaintiff could show that an airplane was unreasonably dangerous and defective, that plaintiff would also be required to demonstrate that a reasonable manufacturer would have built or designed the plane differently. This would essentially mean that manufacturers would have a reduced legal obligation to pursue safety innovations and could content themselves with the status quo. Additionally, the (bill) would allow the manufacturer to avoid liability where the plaintiff used the aircraft in a manner slightly different than intended by the manufacturer, even though such use was foreseeable and the manufacturer could have reasonably produced a product that would have made such use less dangerous. These defenses would lessen manufacturer's incentives to expend their resources to expand safety."

As I indicated earlier, the "intended purpose" language in Section 5(b)(1)(A) and the notion in 5(b)(1)(c) that in order to

establish liability the plaintiff must prove the aircraft "was being used at the time of the accident for a purpose and in a manner for which it was designed and manufactured" raises very serious concerns. Among them are concerns regarding crashworthiness. Manufacturers may escape liability - even though they know that aircraft crash - simply because they do not intend that they crash. If a defective condition in the manufacture or design of an aircraft makes it less crashworthy, why should not that defect establish liability? It is wholly foreseeable that a general aviation aircraft may crash, notwithstanding that it is not intended or designed for that purpose.

While the liability standards in section 5 of the bill are matters of great concern, so too are the restrictions imposed under section 7. No civil action for harm arising out of a general aviation accident may be brought if the accident involves an aircraft which is more than twenty years old. No matter how compelling an injured victim's case might be, no matter that general aviation aircraft are designed to have (and are marketed as having) a very long useful life, no matter that there are many, many planes more than twenty years old that are still in operation, a manufacturer need only manufacture a plane - even a defective plane - that will fly safely for twenty years and that manufacturer avoids liability entirely under the bill.

The most glaring example of what would happen under the proposed legislation is shown by the dismal record of the Beechcraft Bonanza. The V-tail design originated on the Bonanza in 1947, and the aircraft received FAA certification in the 1940's. In 1956, the strength of the design was questioned by the FAA. Yet, thousands of the V-tails were produced, and more than 200 have come apart in the air. This compares with the handful of aircraft with conventional tails that have come apart in the air. S. 473 would exempt Beech from liability for all Bonanzas over 20 years old. I believe that it was the pressure of potential liabiity that caused Beech to be the first general aviation manufacturer to pay for a recall and correction of the defective part on an entire fleet of aircraft.

The comparative responsibility provisions of the bill (section 6) also are worrisome. The right of an innocent victim to full and fair compensation outweighs the policy desire to fix a defendant's financial exposure at precisely the percentage of damages for which that defendant is proved responsible. In the first place, the trier of fact rarely can fix with any reliability an exact percentage of responsibility. But more importantly, the common law rule of joint and several liability is long held and widely accepted. S. 473 would overturn that rule and in cases involving insolvent or underinsured or otherwise unreachable defendants, would have the effect of

imposing the financial burden of a general aviation accident not on the manufacture or supplier or maintenance person or pilot who caused the accident, as the case may be, but on the innocent victim. Under the common law rule, while liability may be joint among tortfeasors there must be individual responsibility in order to permit recovery. That is, under the widely accepted rule of state law, the defendant's conduct by itself must have been sufficient to cause the accident or have been an essential factor in causing the injury. That is not an unfair standard. It is hardly as unfair as forcing the innocent victim to bear the cost of the injury.

I have seen many reasons given for the cost of product liability insurance and the lack of sales of new airplanes. The letters I have written to the industry seeking the actual data on insurance costs have never been answered.

We do know that before the current liability insurance crisis, the cost of new aircraft was going up at double the rate of inflation. The high production of the 1970's resulted in a flood of newer aircraft in the used market. Sales were falling well before the current "crisis" developed. And as we know from many sources, the problems created for many industries by increasing insurance premiums are not related to the tort system, but have their roots in many other causes.

Conclusion

Before revising the aviation tort system, attention should be focused on the standards for safety as promulgated and enforced by the FAA. The aviation industry, in combination with many safety groups and insurance companies, has reduced the number of crashes substantially. Unfortunately, there are still aircraft in use which are unsafe and whose defects should be remedied. Standards for safety must be updated to provide passengers and pilots with aircraft that meet the current standards of technology. A quick "fix" to the tort system will not spare lives; it will only spread suffering to those least able to afford it. The real solution is to prevent the injuries in the first place.

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ALAN A. PARKER
DIRECTOR OF PUBLIC AFFAIRS

July 18, 1988

Honorable Howell Heflin
Chairman, Subcommittee on
Courts and Administrative Practice
223 Hart Building
Washington, D.C. 20510

Dear Mr. Chairman:

Enclosed are the responses of Mr. Charles Hvass to your questions and those of Senator Thurmond submitted following Mr. Hvass' appearance at last month's hearing on the general aviation bill.

Again, the Association of Trial Lawyers of America appreciates the opportunity to contribute to your record.

Sincerely,

Alan A. Parker
Director of Public Affairs

AP:lw

QUESTIONS FROM SENATOR HOWELL HEFLIN

1. Proponents of this bill argue that preemption of state laws regarding liability is appropriate since every other aspect of this industry is regulated by the federal government. Would you respond.

ANSWER: The justification for preemption made by proponents of the bill is flawed on many accounts.

The assumption that "every other aspect" of general aviation is regulated by the federal government is wrong. Insurance requirements for pilots, owners, mechanics, airport operators, etc. are not regulated by the federal government. There is nothing in the bill requiring insurance, modifying state insurance regulations, or preempting state insurance law which has a large impact on liability.

Other federally regulated industries are also governed by state tort law without ill effect. No drug manufacturer can market their products without approval of the Food and Drug Administration, yet there is no preemption of federal law in that field. Automobile design and construction is federally regulated yet there is no preemption. Commercial aviation is completely governed by federal regulation yet there is no preemption. The same holds true for various types of labor management relations, securities laws and so forth. Indeed, in the securities area, the federal government has provided a mechansim for bringing suit; that has not restricted the states from imposing their own safeguards for the protection of the public.

2. This legislation provides for a "state of the art defense" for manufacturers. Won't this allow manufacturers the freedom to improve their product without fearing that the improvements will later be used against them to prove that an alternate design was available?

ANSWER: "State of the art" is controlled by an industry itself. The resultant harm from the "state of the art" defense in the aircraft field is best illustrated by aircraft crashworthiness. Federal regulations provide for a "9-G" minimum for seats and shoulder harnesses in a crash. Research dating back to the 1940's has shown that people can survive crashes of better than "40-G's" and the manufacturers themselves have, in the past, built aircraft environments which provided a "15-G plus" crashworthiness capability.

Yet no manufacturer is producing a complete line of aircraft meeting a 15-G standard or even approaching the 40-G human tolerance limit. Independent manufacturers have produced seats which exceed crash worthiness of the general aviation manufacturers, yet the general aviation manufacturers will not incorporate the seats into their aircraft.

Thus, the "state of the art" has not improved, not because of a fear of liability, but because the federal regulations have not been changed to reflect technological improvements.

Looked at another way, where a change in the "state of the art" will help sell airplanes, manufacturers have been quick to incorporate improvements such as better radios, navigation systems, and will incorporate improved crash worthiness features when required by the FAA or as a result of adverse liability decisions. As an example, shoulder harnesses appeared on all aircraft after mandated by the FAA in 1978. The Beech Bonanza's tail was corrected only after a jury found the plane defective.

3. In recent years, the safety record of general aviation has improved, yet manufacturers' liability insurance costs have increased dramatically. To what do you attribute this rise in liability costs?

ANSWER: First of all, there has been no showing by the general aviation community that liability insurance costs have increased dramatically. The costs per plane produced have gone up because of a slump in production. As I pointed out in my testimony to the Committee, and as well illustrated in the attached advertisement from Piper, and the paper "Technical Thresholds for Revitalizing General Aviation" by E.F. Kraus, the lack of production has resulted from factors other than products liability.

It has become apparent during testimony on this bill that manufacturers did not reserve monies out of past profits to pay the liability costs for aircraft as they were produced. Liability costs are being paid based on current production, which has resulted in skewed figures for insurance as output has dropped. The figures are misleading and should be treated as such.

Liability insurance costs went up across the board in many segments of industry. These increased costs have now been directly linked by several states attorney

generals to conspiracy in the market place by major insurers. These allegations have been made in a lawsuit now pending in the Federal District of California.

4. Would you comment on the comparative responsibility provision of this bill, particularly as it relates to the authority of the court to consider the liability of parties not before the court.

ANSWER: Currently, some states allow a consideration of liability of parties not before the court. Where joint and several liability exists, this is not a problem. However, where a party would be allowed to submit to the jury the fault of the persons over whom the court cannot obtain jurisdiction, and there is no joint and several liability, a Pandora's box would be opened. The temptation to defendants would be to multiply the claims against other nonparties in the hopes of minimizing their own responsibility. This should not be allowed to occur.

5. This legislation excludes the so called "innocent bystander" from coverage under the bill. Is this not an improvement from previous legislation?

ANSWER: To find that this is an "improvement" reminds one of B'rer Rabitt's expression of fear of the briar patch. Manufacturers should not be allowed to propose Draconian legislation and then present an "improved", yet still Draconian alternative.

Secondly, it is not clear under the murky drafting of this bill, that innocent bystanders are excluded. "Claimant" is defined in Section 3, yet that term, as defined, is not used in the applicability section under preemption in Section 4(E). The statute of repose provisions are not defined in terms of claimant at Section 7(A) but are at 7(B). As a result, potential confusion exists as to whether the statute of repose for example, might be applied to "innocent bystanders" where other provisions of the bill might not.

Further, the bill sets up a scheme whereby those riding in an airplane will be prevented from making certain claims, and their heirs will be prevented from bringing certain claims, even though other parties can make claims. It is a strange system of justice which defines widows, widowers, and dependents as something other than "innocent bystanders."Again, the Association of Trial Lawyers of America appreciates the opportunity to contribute to your record.

QUESTIONS FROM SENATOR STROM THURMOND

1. This question is for Mr. Hvass. You point out, in your prepared statement, that the primary incentive to build safe aircraft comes from the civil liability system. What effect will this legislation have upon the development on newer and safer technology?

ANSWER: If this bill were to become law, the incentives provided by the civil liability system would be blunted. For example, punitive damages have been used against one aircraft manufacturer, Cessna, when Cessna failed to correct a problem with its seat tracks. After the punitive damage award, Cessna finally began taking action to correct the problem.

With the limitations on punitive damages in this bill, that safety incentive -- the ability of a jury to award sufficient damages to make a manufacturer correct a defect, would be seriously impaired.

Beech Aircraft denied for many years that there was a design defect in its V-tailed Bonanza. Only after a jury indicated that Beech would be liable for the problems was the tail corrected. This newer and safer technology would not have been applied to these older aircraft if this bill were law because of the 20 year time limit imposed by this bill.

Newer and safer technology comes in two forms. The first is to apply new engines, avionics, instruments, and designs to new models of aircraft at their inception. Hopefully this is done every time a manufacturer designs an airplane. However, we have seen many examples of airplanes where this new technology was not incorporated, with subsequent liability reminding the manufacturer that newer and safer technology must be applied each time an airplane is designed. If this bill were to become law that incentive would be limited.

In addition, newer and safer technology can be applied to older models of aircraft as discoveries are made of design defects, as well as product improvements. The requirement that all aircraft have shoulder harnesses in the front seats is one example of such an application of technology. Although the FAA finally mandated front shoulder harnesses by rule, the civil liability system had already resulted in the manufacturers realizing that shoulder harnesses were a necessary item in an airplane.

This legislation will take away from the current system the incentive for engineers to design safer aircraft.

2. Mr. Hvass, this legislation would establish a time limit after which an aviation manufacturer no longer has liability for harm caused by an aircraft. What is the "average life" of an airplane and how often does one discover design and manufacturing flaws twenty years after the plane is purchased?

ANSWER: There is no "average life" of an airplane. Older models were certified without any life span, and are allowed to fly as long as they are maintained in accordance with FAA ~~regulations~~. Thousands of airplanes more than 20 years old currently exist in the market.

Newer aircraft models were certified with a life limitation based on the number of hours flown, and not the number of years since manufacture. Under this system, a manufacturer can life limit an airplane which would result, if it were flown beyond that number of hours, in a defense to the manufacturer.

We do know that the "average airplane" will be involved in at least one accident in the first 20 years of its existence. Again, some models are more prone to accidents, others are not.

The second part of the question asks how we discover design and manufacturing flaws 20 years after a plane is purchased.

The civil justice system has been responsible for such discoveries.

I have attached to my answers an article published in Trial Magazine dealing with the Beech Bonanza. As can be seen from the ~~article~~, the civil justice system resulted in discovery of old memorandum in which it was pointed out by engineers in 1956 that defects existed in the Beech Bonanza. Beechcraft denied the defect, always maintaining that it was pilot error that caused the crash. The old documents, combined with the lawyers' pursuit of the truth, resulted in a showing that the Beechcraft Bonanza was a defective design from its early years. Further, discovery revealed that there was an economic incentive to continue this defective design, because Beechcraft saved money by producing an airplane with the "V" tail.

Another example is the Cessna 411. Dan Cathcart, a trial lawyer from Los Angeles, had the aircraft test flown. That test flight revealed that the Cessna 411 required rudder forces in excess of FAA regulations when it lost an engine. Those excessive forces resulted in a crash in Richfield, Minnesota.

During the preparation of that case, Cessna, using a test pilot, attempted to show that the airplane was safe by recreating the conditions of the crash. Cessna's own test pilot crashed the airplane during that test flight. This and other discovery in the civil justice system led to the showing that the Cessna 411 was defective, and that finding was confirmed by a jury verdict.

It is the ability to examine the manufacturing documents, the FAA documents, to talk to the test pilots and the production personnel, that reveal these kinds of flaws in aircraft whether they be brand new or 20 years old. If this bill becomes law, that ability will be limited.

3. Mr. Hvass, in your opinion, would this legislation open the door for further legislation seeking to create uniform products liability laws which supersede existing state laws?

ANSWER: Yes. The reason to push this bill, instead of a general products liability bill, is to create specialized legislation on an industry by industry basis. There is nothing about general aviation that makes it unique. Other areas are federally regulated even more so than aviation.

4. Would this bill make it more difficult for plaintiffs to recover in product liability lawsuits against general aviation manufcturers? Why or why not?

ANSWER: The whole intent of this bill is to make it more difficult to recover.

Briefly, the bill preempts at Section 4 state tort laws which are broader than the Act.

The Act at Section 5(B)(1) restricts claims under Section 402(A) of the Restatement of Torts Second beyond any state court created restriction now in existence. The Act completely eliminates any claim for crashworthiness of products.

The Act eliminates any claim for implied warranties under Section 5(B)(3).

The Act eliminates joint and several liability for most cases in aviation accidents at Section 6; and imposes a 20 year time limit for liability for older aircraft. This time limit does not exist anywhere in current Federal aviation regulations, and no general aviation manufacturer has ever represented to the public that their aircraft were unsafe after 20 years of life.

The Act at Section 8 modifies state law with respect to admission of subsequent remedial measures, and at Section 10 makes it significantly more difficult to recover punitive damages, which have been useful to plaintiffs' attorneys in remedying serious defects in aircraft.

The Act creates jurisdiction in the federal courts, which will result in unnecessary burdens on the federal court system and may lead to potential delays to plaintiffs.

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E.F. Kraus, Cessna Aircraft Co.

AIAA/AHS/ASEE Aircraft Design, Systems and Operations Meeting
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TECHNICAL THRESHOLDS FOR REVITALIZING GENERAL AVIATION

E. F. Kraut*

Cessna Aircraft Company
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Abstract

The decline in general aviation sales in the 1980's is shown to be the result of numerous interdependent factors in the overall aviation environment. While lower costs and improved features and performance would positively affect sales, a review of market conditions indicates that the threshold for accomplishing a significant market turnaround through cost and performance improvements alone is beyond the near term application of advanced aerodynamics, propulsion and materials technologies. While such improvements remain essential for the success of new designs, they are shown to play a secondary role in the marketplace to technologies that lower the real barriers to a larger market for personally flown aircraft. Although market variables do not provide the basis for rigorous proof, appropriate technologies for market expansion are indicated.

Nomenclature

F	figure of merit	
P	seats-full payload (lb)	
R	range with seats-full payload at cruise airspeed (NM)	
V	cruise airspeed at 65% power and best cruise altitude (kt)	
Q	nominal cabin volume (L x W x H) (ft^3)	
L	maximum length between forward and aft cabin bulkheads (ft)	
W	maximum cabin width (ft)	
H	maximum cabin height (ft)	
s	specific range at cruise airspeed	$\left[\frac{NM}{TS}\right]$

Introduction

The general aviation industry is experiencing its ninth straight year of declining sales. After a peak of nearly 18,000 units delivered in 1978, the U.S. producers now project about 1225 units[1] for 1987. Nevertheless, revenues this year are still expected to exceed $1 billion, which will support a fair level of new product development. The best choice of where to invest development resources in a declining market realistically involves the dual challenges of first achieving near term profitability in order to survive, and then introducing new products that provide long term strength.

Manufacturers have addressed the first problem by discontinuing products with lowest sales, reducing production and overhead costs, and concentrating on the top end of their product lines where they operate most efficiently. Meanwhile, new product introductions range from evolutionary upgrades of existing airplanes to all-new high technology products.

Despite these efforts, the market continues at its slowest pace in over forty years. Various reasons have been offered for the slowdown and continued low sales,[2,3,4] as summarized in Table 1. Most of these factors have always been present in the demand equation. It is their weighting that varies over time. Several of the factors, such as fuel price, interest rates, the overvalued dollar, and lower profits have improved somewhat since the start of the decline in 1980. Others, including product liability costs, production rates, and market size have worsened.

A market model that relates sales to variations in these factors would be useful for both product planning and sales forecasting. Gustin, McDougall, and others are developing useful models[5,6] that incorporate costs, market size, the financial environment, and airline competition factors. These models have demonstrated valid results, especially for discrete market segments such as business jets, by using disaggregated data. They are limited primarily by the quality and scope of data available for modeling. As yet, market models do not include the effects of the aviation environment, consumer preference, or incorporation of new technologies on sales. These factors prove difficult to quantify, having as much to do with the desirability of general aviation as its utility. This is particularly true for the small single-engine aircraft market. This paper reviews the factors that drive market demand and assesses the opportunity for strengthening sales by incorporating new technologies.

A Historical Perspective

A long term view of the general aviation market shows a volatile sales history with three dominant peaks since 1945 (Figure 1). The first peak is easily explained by oversupply. The two succeeding peaks are more complex. None of the peaks and valleys can be explained by technology issues alone.

The enormous first peak was a result of pent-up demand released after WWII. Pre-war production had climbed to about 6800 units in both 1940 and 1941. Potential demand then went unfilled for 3½ years during the war. Figure 1, based on FAA and GAMA data,[7,8] shows a large peak in 1946 as manufacturers converted from wartime to peacetime production, anticipating a large market that didn't fully materialize. The production of nearly 60,000 aircraft from 1946 through 1948 created an over-supply that was not absorbed for seven years. New

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sales were further suppressed during this period by the conversion of WWII aircraft for the business fleet.

If a steady supply of 6000 airplanes had been produced each year from 1942 through 1955, as shown by the dotted line on Figure 1, a total of 84,000 units would have been delivered. Indeed, actual deliveries for this period totaled 83,122. This simple oversupply model adequately explains the precipitous drop in sales from the 1946 level.

Technology factors were in effect at the time of the decline. In particular, some manufacturers were introducing new technologies such as all-metal airframes, tricycle gear, and simple, self-coordinating controls. Demand stayed low just the same. It is assumed that sales would have been even lower without the benefits and enthusiasm generated by the new technologies. Metal airframes, for example, outsold the pre-war fabric-covered designs and eventually became the standard for personal aircraft. Tricycle gear was slower to catch on, but also became a standard.

The second rise in sales (1955-1966) started with the introduction of popular new models, such as the Cessna Models 150, 172, 182 and 310. The introduction of the VOR navigation system was also an important technical advance that provided reliable and accurate all-weather navigation signals for the first time. Sales then grew steeply in the early 1960's as a result of a number of positive factors: broader and intense marketing efforts, re-styling of aircraft (swept tails) to provide a new look for the older post-war models, a rapid expansion in the number of models offered, numerous detail refinements in airframes and propulsion, and the introduction of new avionics with improved features and reliability. The first business jets and turboprops were also introduced during this period. The introduction of the Investment Tax Credits in 1963 and a general tax cut in 1964 for individuals and corporations gave a further boost to sales.

The second rise came to an end as the country adjusted to the guns and butter economy of the Vietnam era combined with the Great Society. The federal income surtax in 1968, followed by a recession in 1970 and the business uncertainty created by wage and price controls in 1971 were contributors to the decline in sales through that period.

The third surge in sales occurred during the 1970's. This period saw the introduction of the second post-WWII generation of business aircraft. New fanjets and turboprops were enthusiastically purchased by business customers. New piston twins were introduced with higher aspect ratio wings and extensive use of metal bonding. Turbochargers and pressurization systems were improved, allowing more reliable flight at higher altitudes. Numerous other systems improvements (hydraulics, electrical, avionics, landing gear, soundproofing) provided features not available on older airplanes. Orders for popular models were backlogged for more than two years.

At the same time, single-engine models were incorporating more technologies. Retractable gear, turbocharging, and other systems improvements became available on a broader range of models; and one pressurized single-engine airplane was introduced. The products and environment were right and the market soared[3].

The economy also contributed to strong sales which rose steeply in 1973 when the United States withdrew from Vietnam and the Pay Board controls on wages and prices were ended. The Arab oil embargo that year had a minimum effect. Sales remained strong through the fuel shortage and recession that followed the embargo. These factors, as well as the very high unemployment in 1976, and import restrictions by Canada, Mexico, and Brazil, appear to have merely dampened the rise somewhat. The 55 mph national speed limit (1974) and reduced airline schedules (1974-78) were balancing effects. High inflation was a strong driver throughout the 1970's, as resale values remained high and many orders were being placed as a hedge against inflation. Sales grew and remained very high through 1980.

Then negative factors took over: Airline Deregulation (1978), extremely high interest rates (1979-1982), the OPEC oil price run-up (1979-1983), high aircraft prices and operating costs, recessions in 1980, 1981, and 1982, an Air Traffic Controller strike in August 1981, the end of the GI Bill flight training benefits (1982), the onset of numerous corporate mergers and takeovers (now at 400 per month), and loss of the WWII support infrastructure. The latter item results from the retirement during the late 1970's of those who learned to fly during or just after WWII and became a part of general aviation. They created much of today's industry, its operations, and the airspace system we fly in; but they are gone and much of their spirit has gone with them. Altogether, this accumulation of downward pressures on general aviation is a formidable burden for technology alone to overcome.

The history of the marketplace shows that technology has a definite role in the level of sales, and that political, institutional, and economic factors also play a strong role. A review of the relationship between general aviation and the economy is worthwhile for a broader understanding of the market.

General Aviation and the Economy

Unit Sales

The two broad sales fluctuations with peaks in 1966 and 1978 are of particular interest in understanding the relationship between sales and the economy. These fluctuations are not explained by an oversupply model. Instead, they follow the rise and fall of the economy as tracked by the principal economic indicators, such as GNP, employment, capital expenditures, income, and especially profits. Figure 2 compares corporate profits after tax with aircraft unit deliveries. While the actual level of sales does not bear a fixed relation to profits, it is very significant that any upturn or downturn in sales coincides with an upward or downward swing of profits throughout the period shown, until after 1983 when sales failed to respond to a profit rebound. Minor differences can be found between these measures in 1952, 1954, 1958, 1962 and 1968, but no period shows quite the level of divergence that developed

between unit sales and profits after 1983. It should be noted that sales in certain market segments (ag planes and helicopters, for example) still correlate well with profits in their primary customer industries (agriculture, oil). However, the recent failure of aggregate sales to track with overall profits is a concern for the industry.

A slightly different measure of corporate financial strength is suggested as a better predictor of overall sales. Figure 3 compares unit sales with the ratio of profits to corporate after-tax income. This index tracks well with sales throughout the period and is more consistent with the 1983-86 sales trend than the simple profit measure of Figure 2. Like sales, the profit ratio has also dropped to its lowest level since WWII. A significant additional advantage of the profit ratio index is that it always peaks with or leads those sales peaks that end each steep rise in sales (1956, 1966, 1978).

While profits and the profit-to-income ratio are down, few other economic indicators are negative at this time. The economy is generally considered to be good. However, there are two other negative measures that are of interest: the ratio of consumer installment credit to income, which at 16% is higher than at any time in modern history; and the similarly low personal savings rate, now less than 4%. These consumer indices and the corporate profit-to-income ratio index indicate that unusual amounts of money are being spent, even if not on airplanes.

Corporate and individual resources are clearly stretched as never before. To counter low margins, corporations are implementing cost reduction measures that allow expenditures only for those essential and productive items that best improve their rate of return. Similarly, consumers are more cautious in making major purchases.

One interpretation of the current market is that the economy is not right for strong aircraft sales, that profits and related indices have crossed thresholds that now severely limit the money available for aircraft purchases. In this case, immediate price reductions could be introduced to test the elasticity of demand. This has been tried on two single-engine models and more discounting is expected. Unfortunately, since reduced prices result in fewer dollars for research, development, and re-tooling in both the airframe and supplier industries, there may be nothing for technology to do but ride out the cycle, evolving gradual improvements in the usual way and waiting for better times.

A second interpretation is that unprecedented low profits and related indices point to a need for unprecedented improvements in aircraft utility and value in order to effectively compete for corporate and individual spending priorities. This implies that incremental technology improvements will be insufficient to revive the market and that breakthrough technologies are required to re-cross the sales threshold.

Another interpretation holds that economic factors have combined with other factors in Table 1 to drive the market downward, diverging for the first time in 30 years from the normal demand pattern, thereby establishing a new and lower baseline for demand. In this scenario, sales might be expected to bottom out near current levels and eventually begin to increase, very possibly at a slower rate of increase relative to the economy than in the past. Again, breakthrough technologies may be required to overcome the institutional patterns that have evolved to depress sales in this manner.

The challenge for the latter two interpretations is to identify and develop breakthrough technologies that will reposition aircraft on the other side of the sales threshold. These "threshold technologies" face the additional challenge of appearing credible in light of the failure of so many recent "high technology" light aircraft to achieve certification and actually demonstrate their promised improvements in both bottom line transportation value and sales.

Whichever interpretation is preferred, it is clear that the economy, as currently arranged, does not choose to absorb more general aviation aircraft at previous rates. The breakthrough technologies must address this key issue.

Aircraft Utilization

As long as general aviation plays a steady role in personal and business transportation, it is reasonable to expect total fleet hours to closely track growth in the economy. Figure 4 shows that this was generally the case until the 1980's. By 1985, total hours had fallen 21% below the peak of 1979. This reduction of activity has occurred in both business and personal flying.

The decrease is primarily in piston aircraft, which fly 82% of total general aviation hours. Turboprop hours have been generally flat since 1980, and total business jet hours are slowly rising. Table 2 shows relative hours for each airplane category in 1985 (the last year for which complete FAA data is available) compared to the peak year for the category, and compared to 1979. Overall piston fleet hours have fallen 26% from 1979. Clearly, piston aircraft flying has uncoupled from growth in the economy. Preliminary data shows this trend continuing in 1986, with a possible flattening out in 1987.

Average annual utilization per aircraft has been dropping in all airplane categories, even for jets where total fleet hours are increasing. Figure 5 compares utilization for active piston and turbine airplanes. Overall utilization climbed to 200 hr/yr in 1966 and 1979. It is now down to a level similar to 25 years ago.

Turbine airplane utilization is considerably higher than any other category, reaching 600 hr/yr in 1970. It has since declined to 378 hr/yr in 1985, a drop of 37%. Single-engine piston airplanes have the lowest utilization, reaching 183 hr/yr in the late 1960's and 180 hr/yr in 1979. Since then it has dropped 24% to its lowest level in more than 30 years.

This reduced activity in all categories is 21% below the historical capacity level for the fleet. The current fleet overcapacity relative to demand can be viewed as being equivalent to an oversupply of aircraft in the active inventory. With an

active fleet of 197,826 airplanes in 1985, a 21% oversupply might then be 41,500 units. This would represent an upper bound, since hours are not generally transferable between different owners. In fact, there were only 1,877 fewer active aircraft in 1985 than in 1979, despite the sharp drop in hours. Aircraft are staying in the active inventory, but are getting less use.

Technology might attack this problem on two fronts. First of all, new features that increase the desirability of flying would result in more flying hours, thereby increasing the demand for aircraft. Secondly, technologies that provide substantially improved features, performance, and operating costs could accelerate the obsolescence of airplanes in the current inventory. As before, the severe decline in demand indicates the need for breakthrough technologies, rather than evolutionary changes. It also appears that improvements in the operating system (airports, training, maintenance, and airspace) may be as important as improvements to the airplanes.

Aircraft Operating Costs

A principal factor that affects utilization is the cost per flight hour. Operating costs, including maintenance, increased steadily through the 1960's and 70's, but leveled off in 1983 when fuel prices began to decrease.[4] Figure 6 shows that operating costs are now stable, while the Consumer Price Index is rising. This should eventually result in more flying hours; however, as noted above, utilization has not yet shown any improvement. Here again, there may be a threshold that will require a substantial cost reduction to effect a turnaround.

Technology applications to substantially reduce operating costs through improvements in reliability, maintainability, and fuel consumption are needed. Reliable aircraft with low operating costs are always in demand, especially in today's environment. More emphasis on these features is a key to revitalizing the market.

New Aircraft Prices

High prices in recent years have been identified as a major camper on aircraft sales. Figure 7 compares the price rise for High Performance Single-Engine (HPSE) aircraft with the Consumer Price Index (CPI). HPSE aircraft are those executive airplanes with engines having 200 horsepower or more. Prices followed the index fairly well until 1980. Now they are nearly three times higher than ten years ago, while the CPI is about twice as high. For comparison, the new automobile price trend is also plotted, showing that the consumer sees airplane prices rising about twice as fast as automobiles. Average yearly increases for the ten year period shown are: 5.1% for automobiles, 6.7% for the CPI, and 10.5% for HPSE airplanes. These figures strongly imply that prices must be a major factor in the decline of sales.

The automobile data is somewhat misleading in that it includes a downsizing trend through the period, as well as proportionately higher sales of compact and subcompact cars. Figure 8 shows that the prices of unchanged domestic models, such as the full-size Cadillac and Chevrolet Caprice follow the CPI line through most of the period, ending slightly higher than the price index.

The Corvette price line in Figure 8 includes quality adjustments to account for model changes in 1978 and 1984. Without these adjustments, the line would rise even more steeply than the average rate of 11.6% per year shown during the ten year period. This trend above the HPSE aircraft line may indicate that specialty vehicles built at relatively low production rates (such as sports cars and airplanes) have been subject to many of the same cost pressures. In any case, the airplane price increases are not unique. The curious difference is that aircraft sales dropped 90% during this ten year period, while Corvette sales decreased only 12%.

It is important to avoid overinterpreting automobile data, since that industry is substantially different than general aviation. Nevertheless, similar examples have been suggested (motor homes, sailboats, yachts, upscale homes, and resort properties, to name a few) where sales have increased, even though real prices are very high. These examples indicate that falling aircraft sales are the result of more than simply higher prices.

A major new competitive factor has appeared. The consumer can now choose from numerous upscale options that have been purposely moved into the marketplace that was once the province of personal airplanes. It is significant that these competing options were manipulated into this marketplace primarily by the addition of new features. Their performance is roughly unchanged. On this evidence, it is postulated that the cost of airplanes would not be such a driving factor in depressed aircraft sales if the right features had been added to aircraft to maintain their dominance in the upscale market. To counteract this trend, technologies should be pursued that provide added features without greatly increasing price or reducing performance.

An alternative would be to roll back prices enough to overcome consumer resistance. Unfortunately, evidence from the two discount programs now in effect indicates that large rollbacks produce only a small increase in sales within a submarket.

The first discount program started in 1986 when one manufacturer increased the standard equipment on a popular HPSE model and introduced it as a separate promotional model with a 15% lower real price (including quality adjustments). In 1986, only 33 of these promotional models were sold. Projected sales for 1987 are 34 units.

In 1987, a second manufacturer introduced a similar program, this time retaining the same model designation and offering a real price reduction of 23%. At the same time, the company dropped a very similar model. Domestic 1987 sales for the discounted model are projected to be 94 units.

The two discounted airplanes are in the same highly-competitive submarket, made up of 4-seat, retractable gear aircraft with naturally-aspirated engines of 200-285 horsepower. Figure 9 shows sales in this submarket since 1981.

Prices in the the two discount programs have been reduced to 1981 levels, relative to the CPI. Therefore,it might be expected that projected 1987 sales for the two models would compare favorably to 1981 sales of their appropriate preceeding models. Figure 9 shows, however, that 1987 sales of the discounted airplanes are only half their 1981 level.

A total of 128 discounted units were sold in 1987, compared to 71 in their worst year, 1985. Of course, this represents a substantial 80% increase, but at the same time sales of other models improved 175% without special discount programs. It is concluded that, even though high prices might have contributed to the decline in sales, 20% lower prices are not enough to revive the market. The threshold of consumer resistance is higher.

Used Aircraft Prices

Used airplane resale values are very good, averaning 68.2% for ten-year-old single-engine models. Jets delivered in 1976 sold in 1986 for 59.0% of their original price. The residual for ten year old turboprops averaged 55.3% in 1986.[10] Since new airplane prices have risen substantially over the past ten years, a wide gap between new and used prices has resulted. Figure 10 shows the spread of used/new prices for most single-engine airplanes. Five year old airplanes sell for an average 42% of equivalent new airplanes. Ten year old singles average 23% of new prices.

In general, the older airplanes provide performance and features equivalent to the new models, except for having older avionics and moderate wear and tear. As a result, used aircraft dominate the market, as shown by Figure 11, making them the major competitor to new sales. This situation is a fairly stable one, since airplane attrition is a slow process.

Figure 12 shows that nearly 80% of single-engine airplanes remain active after ten years. By comparison, only 14% of automobiles last that long. Aircraft attrition actually slows down as aircraft age because they are generally used less. For example, attrition rates for aircraft produced in the 1950's and 1960's run about 1.0%.

Long aircraft life is a result of several factors: low utilization, intensive maintenance and inspections required for safety, high prices that tend to encourage upkeep for resale, slow obsolescence (few breakthrough improvements in new models), and lack of new aircraft entering the fleet to displace older models. Attrition is accelerated by high operating costs for older, maintenance-intensive airplanes, and by the lack of parts for older models.

The price and longevity of used aircraft make them a viable competitor to new sales, especially during periods of low utilization. Indeed, today's reduced flying activity is the key problem, since new airplanes would automatically be in demand if the demand for flying would increase above the capacity of the existing fleet. Therefore, the technical solutions given for improving utilization will also resolve the problem of competition from used aircraft.

The Pilot Population

Pilot Retention

Active pilots comprise the customer base for aircraft, so the total number of pilots and the annual rate of student starts are important predictors of sales and growth. Figure 13 presents the history of the pilot population since 1952. The number of active, non-student pilots grew modestly up to 1963. At that time, the industry expanded its training programs to attract new students and to interest them in follow-on licenses and ratings. The pilot population then grew rapidly through 1972, fluctuating somewhat since then, but remaining generally flat with some driftdown over the past five years.

Student starts greatly increased during the heavy promotions of the 1960's and remained high through 1979. Since then, enrollments are down 31%, which implies reduced interest in flying by the general population. Another concern for the long run is the high dropout rate. A stepwise comparison of the change in pilot population with student starts over a long period shows that only 1 in 3 students receives a private pilot license. Other data reveals that only 1 student in 5 continues on to accumulate 100 flying hours. Over the long haul, just 1 student in 9 becomes a licensed pilot and stays active for over 15 years.

These pilot retention figures represent a 30 year average. Some periods are better, such as 1963 through 1972, when 1 in 4 students received a private license and remained active. On the other hand, over the past 15 years about 1.8 million students began training, yet Figure 13 shows that the active pilot population is now smaller than 15 years ago.

It is noteworthy that the number of pilots with an instrument rating has grown steadily over the last 30 years. Figure 14 shows that today 47% of active pilots have an instrument rating. This reflects the growing complexity of the airspace system, which requires instrument flight equipment and procedures to enter major terminal areas.

Today's pilots are individually more active than fifteen years ago. The average pilot flew 48 hours in 1986, compared to 35 hours in 1971 (Figure 15). This is a 37% increase, indicating a substantially higher interest and commitment to flying among the current pilot population.

Women Pilots

Fewer than 8% of active pilots are women. Figure 16 shows the historical trend for several pilot categories. Student completions for women have run about 1 in 4. It is evident that few women are attracted to flying, and a smaller percentage than men elect to stay with it.

These facts are not new, and the industry has made changes to improve the appeal of aircraft for women. Electric flaps and gear, soundproofing, and interior improvements are examples. A great deal more is needed.

women's attitudes about general aviation play a greater role in sales than is usually appreciated. Although the average buyer is a 43-year-old man, it is his wife's approval that closes the sale. Many times more often, she cannot be convinced of an airplane's value and safety. These are important image problems to be addressed. Technology has a definite role in their resolution.

General Pilot Issues

The above trends for all pilots indicate a pattern of declining interest by the general public since 1967, poor pilot retention, a trend toward more training to acquire instrument proficiency, and an inability to attract women.

An important factor in being a pilot is that today's aircraft and aviation environment require a substantial commitment to training and proficiency. A prevailing attitude (and one that hurts the industry) is that obtaining a license requires the "right stuff". This stuff actually includes mostly time and money. The average student will invest one year's spare time and $3000 to become a private pilot. The new pilot then quickly learns that an instrument rating is required to bring out the full utility of flying. This usually takes at least two additional years and another $8,000.

Most student pilots have an understanding of training costs before starting. Having already come to terms with costs, the majority who stop flying must do so for other reasons. It is suggested that the factors of complexity, intimidation, inconvenience, and fear are more dominant in the marketplace than has been recognized. Very few student pilots drop out because their airplanes do not have laminar flow wings, canards, efficient engines, or composite construction. More likely they had second thoughts about the basic utility of light airplanes and were frustrated by extensive rules, confusing voice communications, noise, rough ride, complex engines, feeling lost, and -- once is all it takes -- getting the stuffing scared out of them.

These are real problems for technology to solve by the addition of features not currently found in aircraft and the aviation system. To the extent that new aircraft features may increase weight and drag, improvements in aerodynamics, propulsion, and structures will be needed to preserve performance levels.

Technology Assessment

Advanced Technologies

The drop in new aircraft sales might be viewed as a simple price/value issue to be resolved by the application of traditional advanced technologies. In order to test this assumption, a figure of merit has been defined for HPSE aircraft as follows:

$$F = (P)(R)^{.5}\,(V)(Q)^{.5}\,(s)^{.5} \div 10^{7}$$

This definition is somewhat arbitrary, in that it emphasizes cruise performance and may penalize aircraft that feature other capabilities, such as short field performance. This cruise figure of merit was established to reflect the value a customer places on various aspects of productivity and efficiency. It is not derived from cruise performance equations.

Figure 17 shows the figure of merit for 18 HPSE airplanes plotted against typical selling price in 1987 dollars, using data from Reference 11. The line represents a linear fit of the data. The scatter reflects the fact that the figure of merit does not include all airplane features; but more importantly, the scatter shows that some airplanes are more productive than others. In fact, the average unit sales for aircraft on or above the line are more than twice as high as for airplanes below the line. Consequently, the trend line provides a valid starting point for assessing technology benefits in terms of how they might affect sales. In particular, if a cost-effective technology improvement is introduced, the line in Figure 17 should move upward and to the left. The first step is to determine how far the line must move to improve sales. Previous analyses provide some clues for setting goals for new technology.

Figure 11 shows that used aircraft accounted for about 47,000 sales in 1986. The market clearly considers the value of used aircraft to be very good; so a reasonable choice of used airplane value can be used as a goal for new airplane technology. As an example, an aircraft age of seven years was selected. Figure 5 indicates that a seven-year-old airplane has been used about 1,000 hours. This approximates the hours on a three-year-old car, so wear and tear should be minimal. Figure 10 shows that the used airplane price is only 31% of new. The used plane will require some updated avionics to be comparable, so a realistic comparison puts the equivalent used airplane price at 41% of new.

The new aircraft line in Figure 17 is factored by 0.43 to obtain the used plane value trend in Figure 18. It is assumed that new airplanes would sell very well if they provided a level of value similar to used aircraft. Therefore, this line establishes an upper goal for technology.

The minimum improvement in value necessary to revive sales is not known. Evidence has been presented (Figure 9) that a 20% price discount is not sufficient to effect a major sales rebound; so it is assumed that technology must improve value by a greater amount. A 30% improvement is selected as the minimum goal in Figure 18. The shaded area between the upper and lower goals represents the region that technology must reach to substantially improve sales

Having set the general goals for technology, estimates of value added by new technologies were made. References 12 and 13 provide information on aircraft with advanced engines, materials, and aerodynamics. From these and other applications, relative figures of merit were calculated for two technology levels.

Level 1 involves optimum resizing for productivity and efficiency, resulting in higher aspect ratio wings and a better match of engines with airframes. Airframe construction includes bonded aluminum and advanced aluminum alloys. The wings are assumed to achieve 30% laminar flow. Wing tips are sheared for lower drag. Propulsive efficiencies are improved by partial liquid cooling and installation refinements.

Level 2 technologies include Level 1 items plus composite wings, 50% laminar flow, and full liquid cooling. Canard surfaces and pushers were not considered, since References 13 and 14 demonstrate that conventional arrangements are generally superior.

Figure 19 shows the results for Level 1 and Level 2 technologies. In plotting the Level 1 and 2 improvements, it was aggressively assumed that the figures of merit can be improved as shown with no increase in cost. The improvements in value are substantial. Nevertheless, they do not meet the minimum goal.

This method predicts that the efficiency improvements resulting from advanced aerodynamic, propulsive and materials technologies, even when aggressively applied, will not make a substantive difference in sales by themselves. This should not be interpreted as discrediting these improvements, since large and useful advances are possible and are being pursued by general aviation manufacturers. Research and development must continue in order to assure that the new technologies can be implemented with little or no increase in cost. This is definitely not yet the case.

Technology Lessons in the Marketplace

It is important to note that the market often prefers "low technology" airplanes; that is, airplanes that stress the fundamental utility of aviation, rather than the ultimate in high performance. With perhaps one exception, the best selling airplane in each submarket has been a solid, older design that offers only fair performance and efficiency, but provides superior reliability, comfort, utility, and safety. The one exception is at the top end of the single-engine line, where careful resizing and metal bonding have resulted in a good-selling airplane with outstanding comfort and utility as well as better speed.

Manufacturers have tried novel and imaginative configurations in the past with disappointing sales results. With extra effort, moderately different configurations can be designed with equivalent performance and utility; whereas radically new arrangements tend to emphasize a few features at the expense of others, making the overall package less desirable. The standard tractor and aft-tail arrangement has evolved for very good, fundamental technical reasons; and so far, the market prefers the standard configuration.

Since reliability, comfort, utility, and safety are the underlying basis for good sales, technologies that enhance those attributes should provide the best payoff. Past breakthroughs in general aviation have fit those criteria: aluminum airframes (comfort and reliability); turbochargers, constant speed propellers, and pressurization (utility); tricycle gear and radio navigation (safety). These features add weight, and in some cases drag, but the net improvement in key attributes is in their favor.

Threshold Technologies

The previous sections have provided several conclusions about the basic reasons for the current depression in sales. Many of the reasons are institutional and involve the aviation environment more than the airplanes. Low corporate profits and profit ratios, stiff airline competition with their low airfares and expanded schedules, competition from emerging upscale options, growing government regulations that limit access to airports or terminals, the complex airspace and regulatory environment, disorganized and expensive training, frustrations with maintenance, and the popular image of general aviation as unsafe and frivolous -- these are all institutional contributors to the decline. Much of the cure for these problems is outside the technology arena. However, there are ways to change airplanes to reduce the effects of these institutional patterns.

Since the marketplace puts higher value on the general desirability of an airplane than on a few points of efficiency or performance, it is essential to address the kind of features that will allow general aviation to re-cross the sales threshold. Advanced technology propulsion systems should be smoother, quieter, simple to operate, and trouble-free. Advanced materials should have improved damping qualities and a solid appearance. Advanced aerodynamics should provide better ride quality. New avionics should help to organize and simplify the cockpit.

Table 3 lists the type of features that could make aircraft more attractive in today's marketplace. These features concentrate on improving comfort and safety, and should also reduce the perceived complexity of the airspace system. This is only a partial list of the type of development that would be helpful. It suggests a somewhat different direction for technology to pursue in eliminating long standing, and now critical, barriers to growth in general aviation. Improvements in these areas, together with advances in aerodynamic, propulsive, and structural efficiencies, should provide the key for revitalizing general aviation.

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Table 1. Primary and Contributing Factors in Declining Sales

- **High Cost of Ownership**
  - New aircraft prices
    - high product liability costs
    - low production rates
  - High interest rates
  - Recent and pending tax legislation
- **High Cost of Operation**
  - Fuel
  - Maintenance
  - Storage
  - Insurance
- **Reduced Market Size**
  - Reduction in active pilots
  - Fewer student starts
  - Declines in customer industries
    - manufacturing
    - petroleum, gas
    - construction, real estate
- **Financial Environment**
  - Overvalued dollar
  - Low corporate profits
- **Aviation Environment**
  - More restrictions on airspace
  - Strained capacity of the airspace/airport system
  - Increased regulation
  - Inadequate aircraft separation
  - Disorganized training
  - Maintenance frustrations
- **Competition for Air Travel**
  - Good used aircraft
  - Low airline fares
- **Changing Tastes and Preferences**
  - Luxury purchases
  - Homebuilt kit and ultralight aircraft
- **Need for Product Improvements (Technology)**
  - Production and operating costs
  - Performance
  - Features
  - Reliability

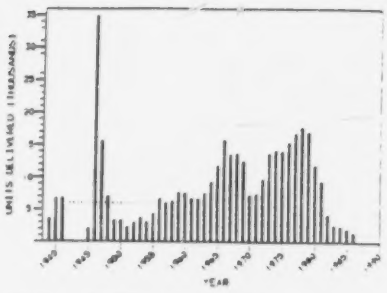

FIGURE 1. DOMESTIC GENERAL AVIATION DELIVERIES

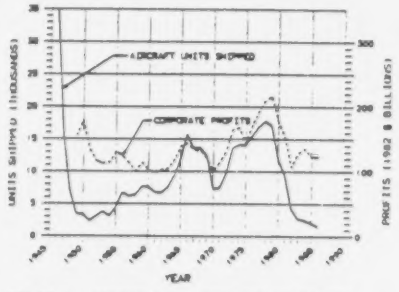

FIGURE 2. COMPARISON OF DOMESTIC DELIVERIES WITH CORPORATE AFTER-TAX PROFITS.

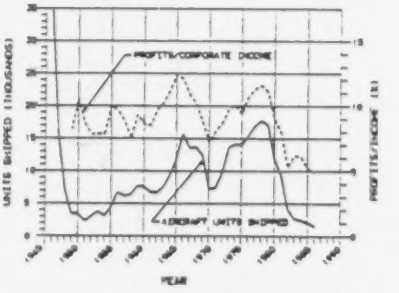

FIGURE 3. COMPARISON OF DOMESTIC DELIVERIES WITH CORPORATE PROFITS AS A PERCENT OF AFTER-TAX INCOME.

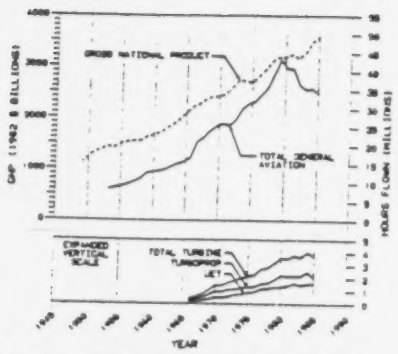

FIGURE 4. GENERAL AVIATION ACTIVITY AND THE GROSS NATIONAL PRODUCT

Table 2. Relative Fleet Hours in 1988

Category	Peak Year	Rel. to Peak	Rel. to 1979
S.E. Piston	1979	0.78	0.78
M.E. Piston	1979	0.72	0.72
Total Piston	1979	0.74	0.74
Turboprop	1984	0.83	1.11
Jet	1985	1.00	1.25
Total Turbine	1984	0.91	1.17
Total General Aviation	1979	0.79	0.79

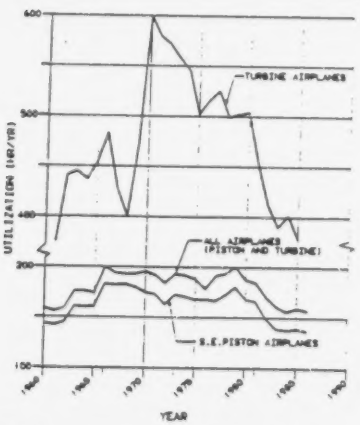

FIGURE 5. ANNUAL UTILIZATION

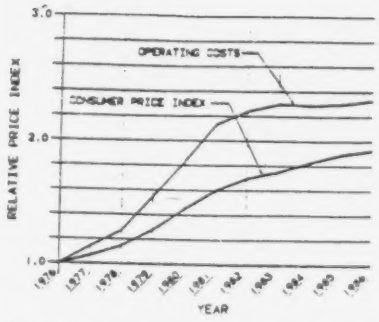

FIGURE 6. SINGLE ENGINE OPERATING COSTS RELATIVE TO THE CPI

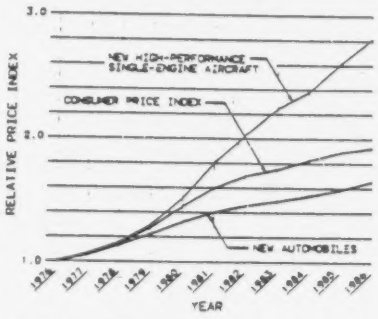

FIGURE 7. PRICE INCREASES

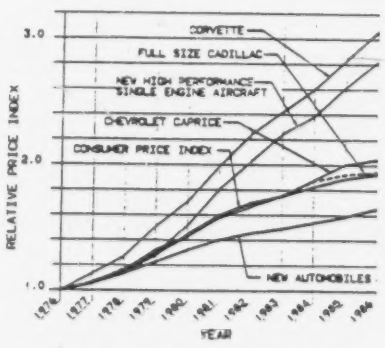

FIGURE 8. AUTOMOBILE PRICE INCREASES

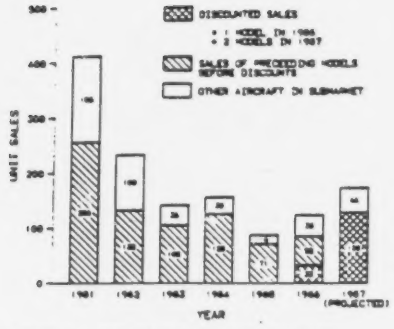

FIGURE 9. EFFECT OF DISCOUNTS ON SALES.

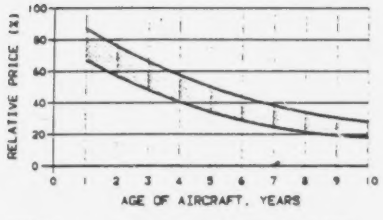

FIGURE 10. RELATIVE PRICE OF USED/NEW SINGLE ENGINE AIRPLANES

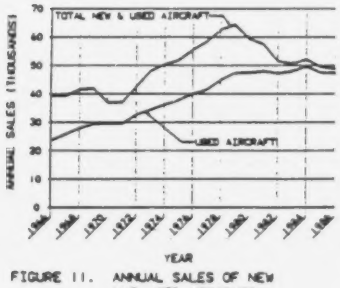

FIGURE 11. ANNUAL SALES OF NEW AND USED AIRCRAFT.

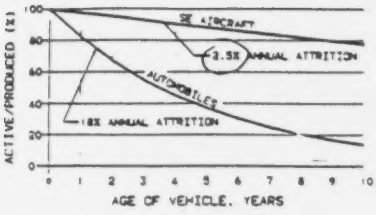

FIGURE 12. AIRCRAFT ATTRITION

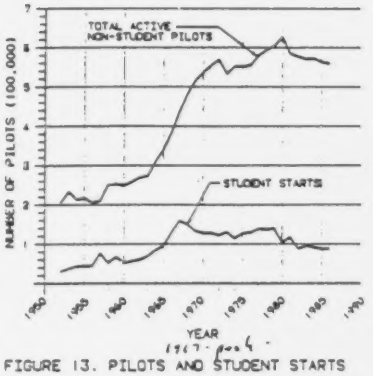

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FIGURE 13. PILOTS AND STUDENT STARTS

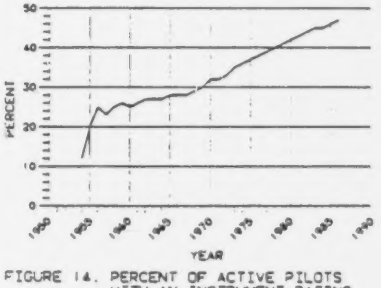

FIGURE 14. PERCENT OF ACTIVE PILOTS WITH AN INSTRUMENT RATING

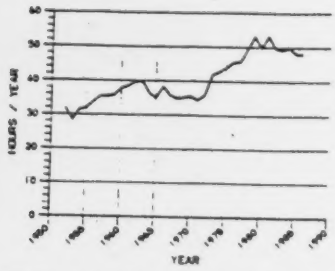

FIGURE 15. AVERAGE ANNUAL HOURS FLOWN PER PILOT

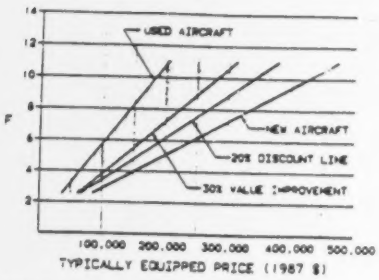

FIGURE 18. ESTABLISHING A VALUE GOAL FOR TECHNOLOGY

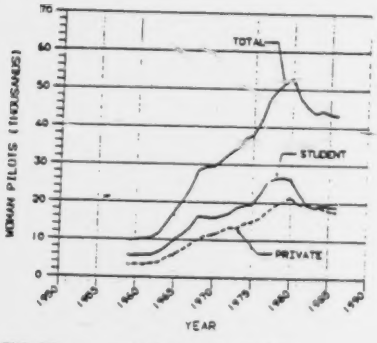

FIGURE 16. ACTIVE WOMAN PILOTS

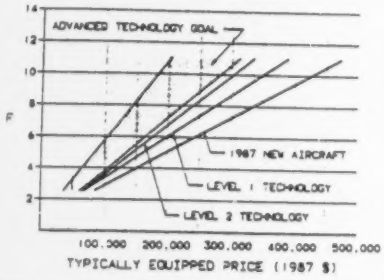

FIGURE 19. VALUE IMPROVEMENTS EXPECTED FROM ADVANCED TECHNOLOGIES

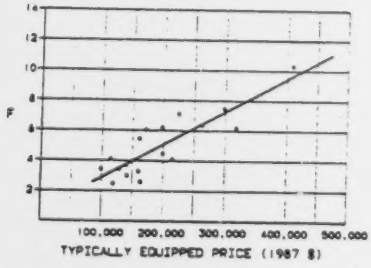

FIGURE 17. VALUE TREND OF NEW HPSE AIRCRAFT

Table 3. Some Suggested Threshold Technologies

- Substantial improvements in reliability, maintainability, and servicing
- Substantial reduction in noise and vibration
- Improved ride quality
- Integrated pictorial instrument and nav. displays
- Digital data linkup and displays
- On-board collision avoidance system
- Simplified power management

The V-Tail Bonanza: A Turbulence Trap

How One Manufacturer Fights Safety

R. Ben Hogan III

Some 250 of Beech Aircraft's V-tail Bonanzas have broken apart in the air, killing 500 people. Design defect is the reason.

The author analyzes* Beyer v. Beech Aircraft Co., *a case in which he represented a plaintiff killed in a V-tail Bonanza.

Since 1947, Beech Aircraft Company of Wichita, Kansas, has produced a distinctive, fast, single-engine plane called the 35-series Bonanza. It has a tail shaped like a V, the only production plane with a V-tail in this country. More than 10,000 have been built. The V-tail Bonanza has a history of in-flight airframe failures. More than 500 persons have died as some 250 of these planes have come apart in the air,[1] earning the V-tail Bonanza the nickname among general aviation pilots: "the split-tail doctor killer," because so many doctors own them.

In-flight airframe failures are comparatively rare in aviation, causing only about 1 percent of all general aviation accidents;[2] yet about 25 percent of V-tail Bonanza accidents have involved such failures. On the average, seven V-tails come apart in the air each year. No one ever survives.

R. Ben Hogan III, a member of the Birmingham, Alabama, firm of Hogan, Smith, Alspaugh, Samples & Pratt, P.C., chairs the 1985-86 ATLA State Delegates.

The official position of Beech Aircraft has been that V-tail Bonanza in-flight airframe failures are the fault of the pilot, who allows the airplane to get into overspeed conditions that result in structural overloads.[3] Beech Aircraft, however, also produces a version of the Bonanza that has a conventional tail, which has had only three in-flight failures in its history—a rate less than one-twentieth as high as the V-tail's, even when flight hours are compared.[4]

Beyer

On May 23, 1979, Joseph Beyer, an instrument-rated flight instructor, was asked by his Florida employer to ferry a V-tail Bonanza to its new owner in Mississippi. The aircraft, N4646D, built in 1956, had less than 3,000 hours of airframe time, making it a "young" plane as Bonanzas go. (The 35 series was designed for an airframe life of 10,000 hours.[5])

Beyer stopped in Tallahassee to refuel and check weather conditions to his destination, Vicksburg, Mississippi. He filed an IFR flight plan that took him directly from Tallahassee past Mobile on an airway at 8,000 feet, then made a right turn onto another instrument flight rules (IFR) airway.

Computer records of the aircraft path and of weather show that Beyer flew a straight line along the intended airway until he was about 7 miles west of Mobile, where he made an unforeseen right turn and disappeared from radar. He was 12 to 15 miles south of a thunderstorm and would have been in broken clouds and light-to-moderate turbulence.

Eyewitnesses on the ground described the plane as descending through the lower cloud layer at 3,000 feet relatively level and "floundering" or "wobbling." They observed the wings and tail suddenly break from the fuselage in what appeared to be an explosion. The fuselage tumbled to an asphalt parking lot below, killing Beyer upon impact.

The estate of Beyer filed suit against Beech in the circuit court of Jefferson County, Birmingham, Alabama, contending that (1) defective tail design led to the failure of the aircraft and (2) Beech was negligent for failing to warn pilots of the higher rate of in-flight breakups of the V-tail Bonanza over its sister conventional-tail model.[6]

V-Tail Design

In turbulent air, the V-tail is subject to a motion known as "dutch roll."[7] The tail, which is missing the vertical stabilizer, wags back and forth, and the pilot cannot stop it.[8] What was suspected but not known was how this motion might lead to destructive failure of the tail, and then the rest of the aircraft.

Design history of the V-tail was instructive. In the early 1950s, Beech tried to lessen the tail-wagging properties in turbulence by increasing the size of the stabilizers. It added 6 inches of sheet metal to the leading edge of each stabilizer (the fixed V-tail surfaces). When this was done, however, the spars holding the tail to the plane were not moved forward.[9] In the revised tail, present in the Beyer airplane and all other post-1951 models, the front spar remained in the middle of the tail. The front 15 inches of the tail is not connected to the airplane.

Documents obtained from the Federal Aviation Administration (FAA) under the Freedom of Information Act quote Carl Prewitt, a Beech engineer involved in the structural changes, as telling government investigators that the spars were not relo-

...would have placed less ... vertical tail rather than a V-tail on the Bonanza if the decision had been solely his.

Flight Testing

Dr. Ron Stearman of the University of Texas at Austin, Dr. Brent Silver, an aviation consultant from California, and Dr. Julian Doughty of the University of Alabama Engineering Department were retained to evaluate the airplane.

The examination of the wreckage showed that the breakup started in the left stabilizer (tail). Investigation began into the other 250 in-flight failures of V-tail Bonanzas and the airplane's design history. Finding that most breakups involved the tail, the unique tail design became the focus of the study. Stearman got a G35 Bonanza like the one involved in the accident and organized a series of flight tests to evaluate handling in turbulence. Silver, who had been studying and writing about the V-tail for 10 years and who is an instrument-rated flight instructor with hundreds of hours of time in a V-tail, rode in the test plane.

Duplicating the tail-wagging motion encountered in turbulence, the tests showed that the leading edges of the stabilizers were subject to downward deflections. This was compounded by a phenomenon known as dynamic stall. When the yaw angle of the tail would reach 10 to 15 degrees, air flow would separate from the tail temporarily, then reattach. In a nose-heavy plane like a V-tail with only a

pilot aboard, the plane's nose would then pitch down suddenly. The effect was to hammer the tail with hundreds of pounds of airload. Obviously a tail made up largely of sheet metal not attached to the fuselage could not take this pounding. It would tend to deform downward, eventually breaking off. The experts had now established both the weak link and a mechanism for the breaking of Beyer's airplane.

Reconstructing the Breakup

Stearman, Silver, and Doughty reconstructed the accident, taking into consideration the design history of the V-tail, its field experience, testimony of the eyewitnesses, examination of the wreckage, and the results of the flight tests. The sudden reversal of course and loss of altitude occurred because the plane had suffered a leading edge deformation at 8,000 feet, causing partial loss of control. The "floundering" and "wobbling" the witnesses had seen was the motion the plane made as Beyer fought for control. After Beyer broke through the lower cloud layer at 3,000 feet, he had started to let down the landing gear.[12] This effort to slow the descent and soften the impact had created additional airloads on the tail, breaking off the already damaged left stabilizer. In an explosive sequence, the rest of the tail separated from the aircraft and the plane pitched over, which threw the wings flat into the wind and broke them downward. The fuselage, missing tail and wings, tumbled to the parking lot.

By statute, the FAA wears two hats. It has the responsibility to foster air safety and also to promote air commerce.[13] Under the FAA regulations, manufacturers are permitted to designate employees who will speak for the government.[14] Since the early 1950s, Beech has been delegated the authority to certify each year's model of the V-tail as airworthy. Employees of Beech, paid by Beech, sign off the airplane as airworthy on behalf of the FAA.

The National Transportation Safety Board (NTSB) investigates aircraft accidents for the government,[15] and the government permits manufacturers to be present during investigations. Beech has had representatives at every investigation of a Beech aircraft accident for many years.

In the *Beyer* investigation, Beech sent an investigator to "assist" the NTSB investigators. The employee prepared a written report, but did not share it with the government. Instead the only copy was submitted to Beech lawyers. The report was obtained during discovery. It describes the sequence of airframe failure as starting in the tail, directly contradicting Beech's position in the trial.

Despite the influence of Beech over government regulation of the V-tail, government employees have implicated the design in several accidents. In 1955, N.N. Shapter, chief of the Airframe and Equipment Branch of the Civil Aeronautics Administration (CAA)—predecessor of the FAA—investigated a V-tail in-flight failure similar to the Beyer aircraft accident. He noted in a memorandum to his supervisor:

> A down load on the tail causes it to deflect torsionally a considerable amount in a nose-down direction. This, of course, increases the negative angle of attack on the outboard part of the tail and further increases or redistributes the download. The stabilizer front spar is located rather far aft at 50% of the stabilizer chord which, of course, explains the torsional deflection.[16]

In May 1956, Robert F. Wedberg, design evaluation engineer, investigated yet another V-tail failure. In a memorandum to the chief of the CAA Airframe and Equipment Branch, he noted the same torsional failure of the tail of the airplane and recommended—

> The front spar of the stabilizer on the V-tail of the Beech Bonanza Series is located too far aft at 50% of the stabilizer chord. As a result the stabilizer deflects torsionally under airload. A down load causes a nose down torsion which increases the negative angle of attack, which further increases the down load on the tail. *In view of the accident record of the Bonanza involving tail failures, it is recommended that the tail be redesigned by moving the front spar of the stabilizer forward.*[17]

In May 1958, Shapter investigated yet another accident and wrote—

> Once again there had been a fatal accident in the region involving a Beech Bonanza tail failure and the question again arises regarding the strength of the tail. . . . As in previous cases which we have investigated, the sequence of failures started with the tail which failed torsionally downward. . . . The torsional failure is due, as you know, to the fact that the stabilizer front spar is located too far aft at 50% of the stabilizer chord. We note in your memorandum . . . that the effect of torsional deflection on the stabilizer airload distribution (CAR3.171b) was not taken into account during the static tests. *This requirement is often overlooked because the problem rarely arises as most tails are designed properly.* . . . It is also noted . . . that the tail was not tested for high torque condition of CAR 3, Figure 3-7. Even though the load may be less for this condition, it is felt that the test should be made because the center of pressure is much farther forward than for other conditions. *We realize that there will be considerable opposition from Beech to retesting the tail as their personnel have been adamant during accident investigations in maintaining that the tail does not fail first. However, we feel that there are good and sufficient reasons for checking the tail.*[18]

Duty To Warn

When a manufacturer sells an airplane, that is not the end of its legal duties if defects in the plane come to its attention. Civil Aeronautics Regulation 3.052 (applicable for the G35 Bonanza involved in *Beyer*), for instance, reads—

> When experience shows that any particular part or characteristic of the airplane is unsafe, the holder of the type certificate for such airplane shall submit for approval of the Administrator the design changes which are necessary to correct the unsafe condition. After the unsafe condition becomes known the Administrator shall withhold the issuance of airworthiness certificates for additional airplanes of the type involved until he has approved the design change and until the additional airplanes are modified to include such changes. Upon approval by the Administrator the design changes shall be considered as part of the type design, and descriptive data covering these changes shall be made available by the holder of the

type certificate to all owners of airplanes previously certificated under such type certificate.

In the case of the V-tail Bonanza, the field experience at issue is the sharp comparison of in-flight failure rate between the 35-series Bonanza with the V-tail, which has had 250 in-flight failures, and the 33 and 36-series Bonanzas with the conventional tail, which have had only three failures. In fact, the 33-series Bonanza has never had an in-flight airframe failure involving the tail. Since the planes are identical in design except for the tail, Silver and others say that the service experience of the V-tail has shown the tail to be unsafe.

Once an aircraft manufacturer produces a design known to be safer, it owes a duty to those using its products to warn against allowing the unsafe products to be used.[19] To put it another way, if a dangerous defect in design comes to the manufacturer's attention after a plane has been sold, the manufacturer has a duty either to remedy the defect or if remedy is not feasible to give users reasonable warnings and instructions about how to minimize the danger.[20] Whether or not there is a general continuing duty to warn where a manufacturer discovers defects in products already in the marketplace, there is a specific duty in aviation.[21]

Beech's Motive

By 1958, Beech management considered the advantages of continuing to manufacture the V-tail Bonanza or replacing it with a conventional tail. An internal study, *Comparison of Model 35 V-tail vs. Model 95 Conventional Tail,* reported—

> Much of the advertising on the Model 35 has been directed toward the advantages of the V-tail; its contribution to the increased useful load of the airplane due to its lighter weight; and the higher performance available due to its lower drag. Another item not advertised but much discussed within the plant has been its lower manufacturing cost which thereby increases our profit potential.[22]

The report summarized the difference in material and labor cost to make a conventional tail rather then a V-tail. It then summarized—

> If the K-35 (Serial 5796 and after) were to be built with a Model 95 tail surfaces [a conventional tail] instead of the Model 35 tail surfaces, the airplane would be affected as follows: (A) Beech cost would be increased about $1,047 per airplane per production cost alone based on unit time on 300th Model 95 tail versus unit time on present Model 35 tail. These figures do not include amortization of any tooling or development costs for licensing the new airplane.[23]

Not only does the V-tail design market well, it is cheaper to make, and it has increased Beech profit at least $1,000 per plane because of lower manufacturing costs.

Eyewitnesses on the ground described the plane as descending through the lower cloud layer at 3,000 feet relatively level and "floundering" or "wobbling." They observed the wings and tail suddenly break from the fuselage in what appeared to be an explosion.

The Trial

Beech never sought removal to federal court and did not contest venue in Birmingham. Beech corporate counsel in Wichita managed discovery, although that firm never entered an appearance. Beech hired a former president of the Alabama Bar Association as trial counsel.

Going into the first trial in February 1985, Beech made no settlement offer. It had never lost a V-tail case.

Not surprisingly, Beech's theory of the accident was quite different from plaintiff's. According to Beech experts, Beyer probably had suffered spatial disorientation at 8,000 feet and had allowed the plane to get into a high-speed dive beyond its certified airframe limits. Thus, the airplane had come apart due to pilot error. It was a theory that had worked in previous cases, no doubt due largely to the absence of eyewitnesses and the testifying skills of the defense experts.

Alabama law allows the contributory negligence defense as a complete bar to recovery under product liability theories. In addition, a unanimous verdict of 12 jurors is required before a judgment can be rendered. At the end of a three-week trial and a two-day jury deliberation, the jury announced it was deadlocked 9-3 for the plaintiff. A mistrial was declared.

Going into the second trial, beginning September 23, 1985, Beech still made no settlement offer. It supplemented its team of witnesses. Nevertheless, after a trial that lasted two weeks and one day, the jury deliberated for two hours and reached a unanimous verdict in favor of the estate of Beyer. The jury had determined the defective design of the V-tail to be the cause of Beyer's disastrous in-flight breakup.

The Future

The V-tail's in-flight problems have not gone unnoticed by either the government or the public. In 1980, the CBS program *60 Minutes* produced a segment on the V-tail Bonanza that reported the higher in-flight breakup rate of the V-tail compared to its sister Bonanza. Since 1979, *Aviation Consumer* has published articles by Brent Silver calling for Beech, the FAA, or both to investigate the V-tail structural problems. The American Bonanza Society, an organization of several thousand Bonanza owers, has asked the Department of Transportation to investigate the claims of structural problems.

In March 1985, the Department of Transportation prepared a study of the V-tail Bonanza.[24] A draft was delivered to Beech and the FAA for comment, and was obtained from Beech in discovery. Because no copy has yet been released to the public, the jury in *Beyer* was not permitted to see it. The two-volume study concludes that the tail of the V-tail Bonanza can break when it encounters turbulence even though the plane is flying well within the expected airspeeds.

More than 7,000 V-tail Bonanzas still fly the skies. The plane has been around a long time and has flown many hours. In fair weather, it flies fine, but it is only a fair-weather

friend. In even light to moderate turbulence, it is not only difficult to control but can deform or break up well within its designed airspeeds. It is a turbulence trap. ■

Notes

[1] Silver, *The V-tail Bonanza—Breaking of a Legend*, AVIATION CONSUMER, Feb. 1, 1980.

[2] U.S. DEPARTMENT OF TRANSPORTATION, TRANSPORTATION SYSTEMS CENTER, TASK FORCE REPORT, V-TAIL BONANZA INVESTIGATION 79 (March 1985).

[3] Beechcraft Safety Communique, June 12, 1980 (distributed to all Beechcraft dealers and owners of record for the Bonanza 33, 35, and 36).

[4] NATIONAL TRANSPORTATION SAFETY BOARD BUREAU OF TECHNOLOGY REPORT NO. NTSB-AAS-79-1 (May 31, 1979); R. Stapleford, A Study of the Effects of Aircraft Dynamic Characteristics on Structural Loads Criteria (Systems Technology, Inc. Report No. FAA-RD-78-155); Silver, *supra* note 1; Task Force Report, *supra* note 2.

[5] C. REMLESKE, DESIGNING FOR CONTINUED AIRWORTHINESS—GENERAL AVIATION (Oct. 1981) (SAE 811038, Aerospace Congress, Anaheim, Calif.).

[6] Beyer v. Beech Aircraft Co., CV 81-2120 (10th Jud. Cir., Ala. Sept. 1985).

[7] D. Tipping, Effectiveness of Various Devices in Damping the Lateral Oscillations, (Dec. 14, 1956) (Beech Structural Analysis Report 570).

[8] P. Hunter, Flight Measurements of the Flying Quality of Five Light Airplanes (1948) (NACA TN1573); M. Barber, et al., An Evaluation of General Aviation Aircraft Handling Qualities 7 (Jan. 19, 1966) (NASA).

[9] Beech Report E22451S (Aug. 8, 1974).

[10] Memorandum of Dec. 2, 1955, from N.N. Shapter, Chief of Airframe and Equipment Branch, to Repon 3 Administrator, CAA, concerning *Fatal Accident Involving Beech Bonanza Model E35, N3291C.*

[11] Deposition of Carl Prewitt, Jan. 21, 1985, in Wichita, Kansas, at 15.

[12] That the landing gear was only partially let down at the time of the plane's breakup was information Beech's own reconstruction experts supplied.

[13] 49 U.S.C. § 1346 (1976 § Supp. 1985) reads—"The Secretary of Transportation is empowered and directed to encourage and foster the development of civil aeronautics and air commerce in the United States and abroad." Section 1421 states—"The Secretary of Transportation is empowered and it shall be his duty to promote safety of flight of civil aircraft in air commerce by prescribing and revising from time to time: . . . [safety regulations]."

[14] *See, e.g.*, Delegation Option Authorization Procedures at Title 14, Code of Federal Regulations, subpart J; 30 F.R. 11375 (Sept. 8, 1965).

[15] See generally 49 U.S.C. § 1441 (1976 & Supp. 1985).

[16] Office Memorandum from N. N. Shapter, Chief Airframe and Equipment Branch, to Regional Administrator, CAA, Dec. 2, 1955, concerning *Fatal Accident Involving Beech Bonanza Model E35, N3291C.*

[17] Memorandum of Robert F. Wedberg, Design Evaluation Engineer, to Chief, Airframe and Equipment Branch, CAA, May 1, 1956, on *Partial Failure of Left Stabilizer on V-tail of Beech Bonanza Model E 35, K3282C.* (Emphasis added.)

[18] Memorandum from N. N. Shapter, Chief Airframe and Equipment Branch, to Repon Three Administrator, CAA, May 23, 1958, reference *Beech Bonanza Model C35 Tail.* (Emphasis added.)

[19] Bell Helicopter Co. v. Bradshaw, 594 S.W.2d 519 (Tex. Civ. App. 1979); Miller Industries v. Caterpillar Tractor Co, 733 F.2d 813 (11th Cir. 1984).

[20] Braniff Airways, Inc. v. Curtiss-Wright Corp., 411 F.2d 451, 453 (2d Cir. 1969), *cert. denied*, 90 S. Ct. 431 (1969) (applying New York law).

[21] See generally Annot., 97 A.L.R. 3d 627, 634 (1980) (duty of manufacturer to improve aircraft system to cure defect discovered after manufacture).

[22] K. W. Rix, Beech Aircraft Corp. Memorandum Report 2452 (Apr. 1, 1958).

[23] *Id.* at 1.

[24] Task Force Report, *supra* note 2.

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Senator HEFLIN. Ms. Lipsen.

STATEMENT OF LINDA A. LIPSEN

Ms. LIPSEN. Mr. Chairman, I am Linda Lipsen, legislative counsel for the Consumers Union, the publisher of Consumer Reports magazine. I am here today on behalf of the Consumers Union and the Consumer Federation of America in opposition to S. 473, the General Aviation Liability Standards Act.

We oppose this legislation because we fear its impact on the legal rights of injured passengers and on product safety. We have been fighting for fair liability standards and product liability legislation for many years now.

This legislation is similar to other bills that we have opposed in the past on general aviation liability and on general products liability, and we opposed these bills because of their impact on the victims of product injuries.

As a matter of ideology, however, we do not oppose Federal product liability legislation, per se. We would favor balanced Federal legislation that did not undermine the safety-enhancing function of the tort system.

However, the legislation before us is not a balanced product liability legislation. It would make it exceedingly more difficult, if not impossible in many cases, for innocent passengers and their families to receive adequate compensation for the horrendous injuries and deaths associated with general aviation aircraft disasters.

We believe that passengers or their families should be able to pursue compensation for their losses from manufacturers, sellers, or negligent pilots under current State law and not under this bill.

Even if pilots wish to restrict their own rights to recovery for injuries or death, as is indicated by their support for this bill, such restrictions should not be applied against passengers who, through no fault of their own, are injured by unreasonably dangerous and defective aircraft.

While we do not pretend to represent consumers of Cessna or Beechcraft, proponents of this bill should not pretend to represent the universe of passengers who travel via general aviation.

The individual who is picked up in response to a medical emergency, the business flyer, and many others should not be subject to the legal standards of this bill, which would tilt the balance in general aviation aircraft in favor of manufacturers.

Under this bill, the doctrine of joint and several liability would be virtually eliminated, so that passengers would be forced to absorb the losses caused by an insolvent wrongdoer.

Under this bill, passengers would also have to absorb losses where another party not before the court was partially responsible. Also, passengers injured by a 20-year-old plane would not even be permitted to go to court, no matter how defective the airplane.

Under this bill, manufacturers could use ignorance of potential safety problems as a shield from liability. Yet, pilots and owners insist that they are the only relevant consumers affected by this bill.

Then if pilots and owners are the true parties in interest, as they claim, why not extend the coverage of this bill to these parties and these parties alone?

Yes, the general aviation industry is suffering from an economic decline. However, there are a number of well recognized factors that have caused the industry's malaise which have nothing to do with products liability and will not be affected by this bill.

The director of communications at the General Aviation Manufacturers Association wrote a letter to the editor of Industry Digest, and I quote:

> It is a rather common opinion that we probably built too many aircraft in the late 1970's in response to consumer demand, fed by speculation, especially speculation on interest rates and rising prices. We did enjoy a boom in the mid-'60s and mid to late '70's, and that perhaps clouds our current view of the situation.

A great many good used aircraft remain available, especially in the low-priced end, but S. 473 does not attempt to address the problems for the industry caused by over-supply and reduced demand.

Other alternative theories for the industry's woes that have been documented by the GAO and the Congressional Research Service include changes in the tax code and increased competition from Brazil.

There is simply not a shred of evidence demonstrating that this legislation will ameliorate the industry's financial problems. If this bill were to be approved, other financially troubled industries will seek similar redress, and all at the expense of injured victims.

General aviation manufacturers argue that they deserve special treatment because their industry undergoes extensive regulatory scrutiny by the FAA. It is correct to assert that the FAA establishes standards for aircraft design, materials, workmanship, construction, and performance.

The Federal Aviation Act specifically requires the agency to set only minimum safety standards. Compliance with these standards indicates no more than the manufacturer perform the minimum effort to make a product safe.

Additionally, FAA regulation amounts to nothing more than self-regulation of the industry, often. In certifying the design, manufacture, and airworthiness of a craft by regulation, the FAA has made the applicant itself responsible for conducting all inspections and tests necessary to determine that the aircraft comports with FAA airworthiness requirements. Therefore, the regulation itself should not serve as an excuse for relieving the industry of its obligation to passengers of general aviation aircraft.

We urge you to oppose this bill, and thank you for considering our views.

[The prepared statement of Ms. Lipsen and responses to questions posed by Senators Heflin and Thurmond follow:]

STATEMENT OF

LINDA A. LIPSEN
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CONSUMERS UNION

ON BEHALF
OF

CONSUMERS UNION
CONSUMER FEDERATION OF AMERICA

BEFORE THE

SUBCOMMITTEE ON COURTS AND ADMINISTRATIVE PRACTICE

OF THE

SENATE JUDICIARY COMMITTEE

JUNE 21, 1988

INTRODUCTION

Consumers Union* and Consumer Federation of America,** respectfully oppose the "General Aviation Accident Liability Standards Act," S. 473. This legislation would have an adverse impact on the existing safety incentives of the tort system and would impair the ability of general aviation air disaster victims, including innocent passengers, to obtain compensation for their injuries. Similarly if S. 473 were enacted, passengers injured in a defective, unreasonably dangerous light plane would encounter multitudinous legal obstacles which may deprive them of justifiable recoveries.

"Reforms" of the tort system like S. 473 would significantly reduce an injured passenger's potential for redress in the courts without providing any other, equally effective method for obtaining compensation. The omission of methods for alternative dispute resolution in this bill is perplexing, considering the fact that the need for an

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*/ Consumer Union is a non profit membership organization chartered in 1936 under the laws of the State of New York to provide information, education and counsel about consumer goods and services and the management of the family income. Consumers Union's income is derived solely from the sale of Consumer Reports, its other publications and films. Consumer Reports, with a circulation of approximately 3 million, regularly carries articles on health, product safety, marketplace economics, and legislative, judicial, and regulatory actions.

**/ Consumer Federation of America is a coalition of over 200 national, state and local consumer, senior citizen, labor, farm, cooperative and rural organizations which together represent more than 30 million people.

alternative approach to time consuming, costly litigation is well recognized. Product liability bills considered in the Senate during the last Congress and in the House Committee on Energy and Commerce this year have included some cost saving mechanism for dispute resolution. Yet this legislation drastically cuts back current legal rights of those individuals injured in a general aviation accident, without adding anything back to the product liability system to fill the void.

REGULATION BY THE FAA

The General Aviation manufacturers argue that they deserve special treatment because their industry receives extensive regulatory scrutiny by the Federal Aviation Administration (FAA). While it is correct to assert, as proponents of the bill do, that the FAA establishes standards for aircraft design, materials, workmanship, construction and performance, the Federal Aviation Act of 1958, 49 U.S.C. 1421 (a)(1)(Supp. 1985) specifically requires the agency to set only minimum safety standards. Compliance with these standards indicates no more than the manufacturer performed the minimum effort required to make a product safe. See RESTATEMENT (Second) of Torts §288C (1969). See also, Wilson v. Piper Aircraft Corp, 282 Or. 61, 577 P.2d 1322 (1978); Rucker v. Norfolk & Western Railway, 77 Ill. 2d 434, 396 N.E. 2d 534 (1979). Government standards may be outdated or under-

protective, and may not reflect the state of knowledge of the industry concerning all safety consequences of industry practices.

More important, FAA regulation often amounts to nothing more than self-regulation by the industry. In certifying the design, manufacture and airworthiness of a craft, "by regulation, the FAA has made the applicant itself responsible for conducting all inspections and tests necessary to determine that the aircraft comports with FAA airworthiness requirements." [U.S. v. S. A. Empresa De Viacao Aerea Rio Grandense Varig, 467 U.S. 797,104 S. Ct. 2761, 2756 (1984); see also 14 CFR §§ 21.33, 21.35 (1983)]. As the Supreme Court explained in Varig, the intimate involvement of aircraft manufacturers' employees themselves in the certification process is compounded by the FAA's own practices:

> With fewer than 400 engineers, the FAA obviously cannot complete this elaborate compliance review process alone. Accordingly, 49 U.S.C. § 1355 authorizes the Secretary to delegate certain inspection and certification responsibilities to properly qualified private persons. By regulation, the Secretary has provided for the appointment of private individuals to serve as designated engineering representatives to assist in the FAA certification process. 14 CFR § 183.29 (1984). These representatives are typically employees of aircraft manufacturers who possess detailed knowledge of an aircraft's design based upon their day-to-day involvement in its development. See generally Improving Aircraft Safety pp. 29-30. The representatives act as surrogates of the FAA in examining, inspecting, and testing aircraft for purposes of certification. 14 CFR § 183.1 (1984). In determining whether an aircraft complies with FAA

> regulations, they are guided by the same requirements, instructions, and procedures as FAA employees. FAA Order 8110.4 p. 151; CAA Manual of Procedure § .70(b). FAA employees may briefly review the reports and other data submitted by representatives before certificating a subject aircraft. Improving Aircraft Safety 31-32; FAA Order 8110.4, p. 159; CAA Manual of Procedure § .77.

In view of this, it is not surprising that the Supreme Court of California concluded in Elsworth v. Beech Aircraft Corp., 208 Cal. Rptr. 874 (1984):

> Here, there can be no question as to the intent of Congress to allow the states to apply their own laws in tort actions against aircraft manufacturers for the defective design of airplanes, in spite of the fact that federal law may have completely occupied the field of regulation of aircraft safety and certification. The Federal Aviation Act of 1958 expressly declares that its provisions are not intended to abridge remedies that a party may have under state law. (49 U.S.C. § 1506).

We are not aware of any alteration of the Federal Aviation Act or of any changes in FAA practices that would justify the abridgement of state tort law remedies embodied in S. 473.

Finally, it is ironic that the same community of airplane makers and users, known for opposing regulation by the FAA, is now seeking to hide behind such regulation as a means of avoiding liability.

THE ISSUE OF SUPPLY AND DEMAND AND STATUTE OF REPOSE

The source of the economic decline of the general aviation industry can be traced to the surplus of high quality,

used airplanes on the market. S. 473 does not address the problems for the industry caused by oversupply and reduced demand. The March, 1986 issue of Industry Week noted that:

> "A great many good used aircraft remain available, especially at the low end which reflects a basic industry problem: it makes its planes too well...."
>
> "Until recently, major technological advances have been rare."

The Director of Communications at the General Aviation Manufacturers Association explained the present economic picture for the industry as follows:

> "It's a rather common opinion that we probably built too many aircraft in the late seventies in response to consumer demand fed by speculation, especially speculation on interest rates and rising prices. It's easy now to forget the heady times back then when everyone was scrambling to buy sports cars and seemingly everything else to avoid higher prices next year--a classic effect of fast-moving inflation."....We did enjoy a boom in the mid-1960's and mid-to late 1970's that perhaps clouds our current view of the situation." (Drew Steketee, "Letters to the Editor", Aviation Digest (July 1986).

To resolve the problem caused by the oversupply of good, high quality used aircraft which compete favorably with the new models, the general aviation industry is seeking an arbitrary cut-off of the right to pursue claims for damages. Under Section 7 of S. 473, passengers injured in a general aviation accident would not have the right to pursue a claim, if the accident involved a small craft or its parts which were more than 20 years of age. Thus, the bill would automatically cut

off remedies even before injury or death occured, or before any claim for damages could be reasonably asserted. This automatic cut-off would operate to prevent recoveries, irrespective of the useful life of the general aviation aircraft or the underlying cause of the injury.

STANDARDS OF LIABILITY

Section 5, which sets forth the standards of manufacturer liability, dramatically tips the scales of justice against the victims of aviation accidents that result from dangerous defects in the aircraft involved. Section 5 would upset the proper balance between parties to a lawsuit by eviscerating the doctrine of strict liability and creating significant barriers to recovery.

Product liability cases are inevitably complex ones where the manufacturer's expertise and necessarily greater knowledge of the facts relevant to the issue of a product's design and manufacture create crucial advantages for defendants in the cases. Under S. 473, accident victims would be forced to prove not only that a product was dangerously defective (as under the doctrine of strict liability) but other elements of liability, evidence for which in many cases can be impossibly elusive.

1. Section 5(b)(1)(A) Would Increase Plaintiff's Burden

Section 5 would impose on plaintiffs a significant added burden when they brought strict liability claims. Instead of merely having to come forward and show that the product that injured them was dangerously defective, they would also have to prove, in effect, that the condition of the product was unreasonably dangerous according to "engineering and manufacturing practices... which were reasonably feasible." Most courts already permit the feasibility of design alternatives to be considered as part of the determination of a product's defectiveness. See, e.g., Barker v. Lull, Engineering Co., Inc., 573 P.2d 443 (Ca. 1978); Bruce v. Martin-Marietta Corp. & Ozark Airlines, Inc., 544 F.2d 442 (10th Cir. 1976) (applying Maryland and Missouri law). However, as the court in Barker made clear the burden of proving that the product was not defective in light of what was feasible must rest with the manufacturer. After all, it is the manufacturer who is uniquely positioned to understand the characteristics of a product's design as well as those of any alternatives. It is simply unfair to require the far less qualified of the two parties, the plainfiff, to shoulder the burden of proof in this inquiry.

2. Section 5(b)(1)(A) Narrows Manufacturer Liability

At the same time as it increases plaintiff's burden, Section 5(b)(1)(A) would narrow the scope of a manufacturer's liability for an unsafe product. Before a plaintiff could even get his or her case to the jury, he or she would have to show not just that the defect was unreasonably dangerous in light of what could or should have been possible but that the product was defective "according to engineering and manufacturing practices.... which were reasonably feasible." The use of the phrase "engineering and manufacturing practices" comes uncomfortably close to suggesting that the measure of defectiveness would be the customs and practices of the industry. Even in a negligence context, the law has long since rejected the notion that a manufacturer's obligations are limited by industry custom or practice. See The T.J. Hooper, 60 F.2d 737 (2d Cir. 1932) (L. Hand, J.).

Any inclusion of a "state of the art" concept in a strict liability standard, which Section 5 would do, must encompass incentives to produce safer aircraft. Accordingly, there must be an affirmative duty to advance the state of the art. Defectiveness or unreasonable danger must be determined with regard not just to what was known but to what could have been known though appropriate testing and inspecting, and through investigation of potential product risks. At the same time,

product design must be adjudged with regard not just to what was reasonably feasible but to what could have been rendered feasible. A narrower formula such as the one included in Section 5 would seriously undercut manufacturers' incentives for safety. Holding a product to no greater standard than reasonable feasibility would mean that the law would not require the manufacturer to push the limits of "existing technology" of safety beyond current limits -- just the opposite of what the doctrine of strict liability must continue to do.

3. Section 5 Would Relieve Manufacturers of the Duty of Producing "Crashworthy" Aircraft or Aircraft Capable of Withstanding Other Foreseeable Risks

Section 5(b)(1)(a) would adjudge the safety design of a small plane only in the context of its "intended use" or "intended purpose." Current law, however, requires more of a product: it must be adequate to meet all foreseeable circumstances even if they involve uses or misuses that were never intended. This doctrine of foreseeability is indispensable to ensuring the safety incentives created by strict liability. See, e.g., Larue v. National Union Electric, 571 F.2d 51 (1st Cir. 1978).

Under current law, it would be impossible in virtually any state court for aircraft owners to argue that either

unusual exigencies or pilot boldness, for example, are not foreseeable in the use of their aircraft. Nor could they argue that such foreseeable factors would not lead to foreseeable deviations in the use of the aircraft from "the purpose and ... manner for which it was designed and manufacturered." From the point of view of safety, particularly the safety of innocent passengers who have no control over such exigencies or deviations, it is critical that manufacturers be obliged to continue to make products that can accomodate the risks that result from such deviations. Unfortunately, Section 5 would relieve manufacturers of this obligation.

This doctrine is particularly vital in the area of general aviation because "foreseeability" helps to ensure that aircraft are designed to be "crashworthy". If the design of a craft were considered only in the context of their intended use (i.e., used to fly, not to crash) then aircraft would not have to be designed, as they are now, to protect occupants from injuries in crashes. Meil v. Piper Aircraft Corporation, 658 F.2d 787 (10th Cir. 1981); Duncan v. Cessna Aircraft Co., 632 W.W.2d 375 (Tex. App. 1982). See Larsen v. General Motors Corp., 391 F.2d 495 (8th Cir. 1968). Indeed, courts fashioned the concept of "crashworthiness" as a design element required for the foreseeable risks created by aircraft and automobiles precisely in response to manufacturers' arguments that air and auto crashes were not among the intended uses of planes and

cars. In Duncan, for example, an easily correctable design flaw in the occupant seats led to death in a low-speed plane crash. The manufacturer sought to escape liability in part on the ground that the accident was not an intended use of the craft. Defining foreseeability very broadly, the court ruled that the manufacturer had to be held liable for foreseeable, if unintended, mishaps.

JOINT AND SEVERAL LIABILITY

S. 473 would arbitrarily restrict recovery in general aviation accidents by substantially limiting the liability of defendants who share responsibility for the accidents. Rather than allow injured parties to recover all their damages from a defendant who is substantially responsible for the injuries, as under the widely accepted state law rule of joint and several liability, S. 473 would limit defendants' financial exposure to the exact percentage of damages that plaintiffs can prove each defendant responsible for.

Section 6's rule of comparative responsibility would hold the innocent victims of general aviation accidents -- instead of the manufacturers, suppliers, maintenance personnel or pilots who caused the accident -- financially responsible for the portion of damages attributed to "nonparties" (e.g.,

insolvent manufacturers, under- or uninsured suppliers and employers immune from lawsuits under workers' compensation laws). This rule of law would leave general aviation accident victims undercompensated by limiting the liability of defendants whose conduct, by itself, was sufficient to cause the entire accident or was an essential factor in causing the accident.

We believe that victims' interests in full, fair recovery are best served by preservation of the common law doctrine of joint and several liability. Under state law, joint and several liability applies only when there is an indivisible harm resulting from the conduct of more than one party. A victim suffers indivisible harm when multiple parties -- like airplane parts manufacturers, assembly personnel and pilots -- engage in injurious conduct, yet the conduct of any one of the parties in itself could cause the entire injury, or the conduct of each party could be an essential cause of the injury. Because responsibility for the kinds of injuries resulting from aviation accidents cannot be logically divided among the defendants, it is unfair to condition plaintiffs' recovery on proving the precise responsibility* of each defendant.

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*/ S.473 only retains joint and several liability for manufacturers under limited circumstances related to defective systems, components, subassemblies, etc. over which such manufacturers have substantial control.

CONCLUSION

The General Aviation Accident Liability Standards Act would create reduced liability rules for manufacturers of general aviation aircraft. The proponents of the legislation have not demonstrated that the existing state standards have been applied in an unreasonable manner. In contrast, it is clear that the legislation would leave injured passengers without adequate compensation. Equally important, relaxing liability standards could only result in decreased incentives to design and manufacture safer aircraft.

RESPONSES OF LINDA A. LIPSEN TO QUESTIONS ASKED BY SENATOR HEFLIN

1. Proponents of this bill argue that preemption of state laws regarding liability is appropriate since every other aspect of this industry is regulated by the federal government. Would you respond.

Tort law, as developed through the states encourages manufacturers to make safe products. Tort litigation serves a complementary function to regulation. Proponents of this bill seek to displace particularly effective safety enhancing tort rules with a federal scheme which will tilt the balance in general aviation product liability litigation in favor of manufacturers, sellers, and pilots. According to proponents, the changes contained in S. 473 are justified due to the federal regulatory role in their industry. We do not agree.

The Federal Aviation Administration is required only to set minimum safety standards. The fact of compliance with such minimum standards, is only indicative that the manufacturer performed the minimum effort required to make a product safe. Further, FAA regulation often amounts to nothing more than self-regulation by the industry. In certifying the design, manufacture and airworthiness of a craft, the FAA has made the applicant itself responsible for conducting all inspections and tests necessary to determine that the aircraft comports with FAA airworthiness requirements. (U.S. v. S. A. Empresa De Viacao Aerea Rio Grandense Varig, 467 U.S. 797 1984).

Because the Agency uses industry surrogates to help it regulate due to their small staff and finite resources, the Supreme Court of California concluded in Elsworth v. Beech Aircraft Corp., 208 Cal. Rptr 874 (1984):

> Here, there can be no question as to the intent of Congress to allow the states to apply their own laws in tort actions against tort manufacturers.....

2. This Legislation provides for a "state of the art defense" for manufacturers. Won't this allow manufacturers the freedom to improve their product without fearing that the improvements will later be used against them to prove that an alternate design was available.

On the contrary, S. 473's state of the art language would encourage manufacturers to ignore the safety consequences of their activities. The standard of liability would impose negligence based limitations upon an injured person's recovery of compensation even where he or she has proven that the product is unreasonably dangerous and defective. Accordingly, (See Sec. 5 (b) (1) (A)), the product would not be considered unreasonably dangerous and defective unless engineering and manufacturing practices which were reasonably feasible (could have prevented the harm.)

Defectiveness or unreasonable danger must be determined with regard not just to what was known but to what could have been known through appropriate testing and inspecting, and through investigation of potential product risks. The product should be judged according to what could have been rendered feasible, rather than just what was reasonably feasible. Under the

liability standard of S. 473, manufacturers would not be encouraged to advance the state of the art, since by seeking safer substitutes for dangerous products, liability could attach. Instead, of the state of the art language allowing manufacturers "the freedom to improve their products," as the question suggests, the true impact of this language would be to stifle safety innovations.

3. In recent years, the safety record of general aviation has improved, yet manufacturers' liability insurance costs have increased dramatically? To what do you attribute this rise in liability costs?

General aviation is not the only endeavor plagued by substantial liability insurance rate increases over the last few years. Professions and activities, such as day care centers, nurse midwives, school bus companies, commercial fishermen, architects, accountants, municipalities, and physicians all have experienced huge and inexplicable premium increases. These groups have experienced staggering rate increases, despite their safety records, or litigation history. Moreover, many of these groups are self-insured, like the general aviation industry and are subject to standards of liability, similar to those contained in S. 473.

In December of 1987, the National Association of Insurance Commissioners testified before the Commerce, Consumer Protection, and Competitiveness Subcommittee that it had concluded that tort legislation would not reduce insurance costs: "[We] have not bought the underlying argument that the liability crisis was principally caused by excesses in the tort system".

4. Would you comment on the "comparative responsibility" provision of this bill, particularly as it relates to the authority of the court to consider the liability of parties not before the court.

S. 473's rule of comparative responsibility would hold the innocent victim's of general aviation accidents----instead of the manufacturers, suppliers, maintenance personnel or pilots who caused the accident---financially responsible for the portion of damages attributed to "nonparties" (e.g. insolvent manufacturers, under or uninsured suppliers and employers immune from lawsuits under workers' compensation laws). The comparative responsibility rule as contained in S. 473, would leave general aviation accident victims undercompensated by limiting the liability of defendants whose conduct, by itself, was sufficient to cause the entire accident or was an essential factor in causing the accident.

Furthermore the comparative responsibility provision may be legally impermissible given the requirements of Rule 19, Joinder of Persons Needed for Just Adjudication. The rule requires that indispensable parties be joined to the action where feasible, and where not feasible that the action be dismissed unless strong policy considerations dictate otherwise. S. 473, however, allows the courts to ignore established policy preference for joining indispensible parties, by authorizing the court to determine comparative responsibility of nonparties.

Although the intent of Rule 19 is to protect the interests of nonparties, it is also geared to securing full recovery for plaintiffs. The rule states in part that "[a] person ... shall be joined as a party in the action if (1) in his absence complete relief cannot be accorded among those already parties...". If joinder is not feasible, and if the court

determines that the nonparty is dispensible, however, the court may proceed with the action, subject to the limitation imposed by the 1966 amendment that "the court can make a legally binding adjudication only between the parties actually joined in the action." In apparent contravention of this limitation, the language of S. 473 provides unambiguous authorization for the court to determine nonparty liability.

5. This legislation excludes the so-called "innocent bystander" from coverage under the bill. Is this not an improvement from previous legislation?

Unquestionably, excluding innocent bystanders from the bill is an improvement over previous incarnations of this legislation. The bill as reported from the Senate Committee on Commerce in the last Congress also excluded bystanders in order to respond to the Aero Mexico disaster, where innocent bystanders on the ground and passengers aboard a commercial plane were involved in a general aviation accident. Since the Senate Commerce Committee recognized that innocent victim/bystanders and innocent victim/ commercial passengers should be excluded from the bill, we see no compelling rationale for failing to extend the exclusion to all innocent passengers.

RESPONSES OF LINDA A. LIPSEN TO QUESTIONS ASKED BY SENATOR THURMOND

1. In your prepared statement you discuss the statute of repose and its effect on plaintiffs who seek to bring product liability claims against the general aviation manufacturers. What do you believe will be the practical consequences of having a twenty year statute of repose as contemplated under S. 473? Should the statute of repose be longer or shorter?

The practical consequence of the twenty year statute of repose would be to automatically cut off remedies to general aviation accident victims, irrespective of the useful life of the product. (the useful life of a general aviation aircraft extends beyond 20 years as a general matter) or the defectiveness or degree of danger of the product. It is unfair to bar just, provable claims simply because of the age of the product, especially where as here, the industry produces planes that are intended to last beyond 20 years. Furthermore, consumers purchase used small planes with the expectation that they will be safe for use for many years.

In short, while we believe product liability litigation involving older products poses extreme evidentiary difficulties for plaintiffs and are typically harder to pursue and prove than cases involving newer products, we oppose efforts to bar lawsuits based on some arbitrary age of the product. Thus we cannot recommend the age of the product as a basis for barring suit. However, we would not oppose a measure which would establish a rebuttable presumption that a product older than its recognized useful life was not defective or unreasonably dangerous. At least such a provision would allow innocent victims whose injuries or death occur as a result of an unreasonably dangerous and defective small plane, the opportunity--though limited by the presumption--to recover compensation.

2. Ms. Lipsen, in your prepared remarks you state that rather than allow injured parties to recover all their damages from a single defendant who is partially responsible for the injuries, as under the widely accepted rule of joint and several liability, S. 473 would limit the defendants' damages to the exact percentage of his fault. If enacted, would S. 473 allow general aviation accident victims to go undercompensated for their injuries.

Yes, S. 473 would leave many general aviation victims undercompensated or uncompensated. As discussed in our testimony, several provisions including the statute of repose, and negligence-like standard of liability--with its "state of the art" and intended use" language would make it all but impossible for many victims to prevail in general aviation product liability lawsuits. The virtual elimination of joint and several liability and provisions involving the comparative responsibility of non-parties will contribute to the unjustified undercompensation of a multitude of accident victims. Because general aviation disasters are often multi-party suits, it can be expected that these provisions will come into play in almost every lawsuit involving general aviation.

Sections 6 (b) and (c) of the bill eliminate joint and several liability in all except two narrow circumstances. Accordingly, wrongdoers would only be liable for the percentage of fault attributed to them and would not bear responsibility to the plaintiff where other wrongdoers were insolvent or otherwise not before the court. Thus if a pilot, (who under this bill isn't even required to carry a minimum amount of insurance) is 50 per cent liable, but judgment proof, the manufacturer adjudged at 50 per cent liable would only have to pay his percentage of fault. This would be true regardless of the fact that his conduct alone without pilot negligence would have caused the accident. The injured or dead accident victims, under this scheme would be forced to absorb the costs attributable to unavailable or insolvent parties. As between the party causing the injury and the innocent victim, we believe the wrongdoing party should be required to pay.

The comparative responsibility provision, Sec. 6 (a) of the bill further insures the undercompensation of injured victims, by subtracting the amount of apportioned liability of non-parties from the amount plaintiffs could receive in compensation. It is unfair and against sound public policy to require innocent victims to pick up the tab for guilty parties not even within the court's jurisdiction. The inclusion of non-parties whose percent of liability could not even be adequately determined in a comparative responsibility determination runs counter to notions of fair play and adequate compensation for victims.

3. What effect would adoption of this legislation have on the insurance premiums paid by general aviation manufacturers.

The general aviation manufacturers have not offered any concrete evidence demonstrating that enacting this legislation would have any impact on insurance rates. The suggestion that limiting victims rights will automatically lower or contain premiums has no basis in fact. In January of this year, Roger Gilbert, Chairman of the insurance industry's ratemaking organization, warned in a speech before an industry group that tort reform "will not eliminate the market dynamics that lead to insurance cycles." According to Mr. Gilbert, "We must not over-promise---or even imply---that insurance cycles will end when civil justice reform begins."

Senator HEFLIN. Thank you.

Mr. Hvass, have you seen the Department of Justice's letter?

Mr. HVASS. I have.

Senator HEFLIN. Do you want to respond in any way to Mr. Martin's statement pertaining to the Federal Tort Claims Act. What is your position on whether the Department of Justice is right or Mr. Martin is right?

Mr. HVASS. The way I read the letter, sir, the Justice Department has expressed a couple of concerns. One has to do with the numbers of cases that will end up in the Federal court system.

If I do my calculations correctly, my experience with general aviation cases is that they take at least three years from the time you start one to the time you get done. We are going to add 450 cases, at a minimum, to the Federal workload in the Federal courts.

I think the Justice Department is correctly concerned with the fact that it does cause some confusion, and their concern is that in a Federal Tort Claims Act case, they have the right to go after the manufacturer. This changes those rules.

The U.S. Government would no longer have the right to go back after a Cessna, for example, where a Cessna 411 ends up killing three FBI agents in a crash. They would no longer have the right to go back and collect monies that the government had to pay out if the government was sued in a Federal Tort Claims Act case.

For example, if there was an icing situation where the government did not correctly forecast the icing and there was a question if the plane could fly in the icing, they would lose some of their ability to go back and lay off that burden, and I think the Justice Department is concerned with that, and concerned with that correctly, because it does change the rules for everybody.

I think that the Justice Department concerns are the burden on the courts and the fact that we are changing the rules for the manufacturers, but we are not changing the rules for anybody else.

Senator HEFLIN. Mr. Martin mentioned something about Yankee Stadium, and I want to give you a hypothetical case, and I want to let Mr. Martin respond, too, to this or anyone who wants to.

We have a situation where there is a crash between a general aviation plane which has less than 20 passengers—you have a crash with an airliner where you might have 100 or more, or 200, or whatever you might have.

They are over Yankee Stadium; they both fall into a crowded Yankee Stadium. There is some element involved here as to the Federal Aviation Administration where there could be a Federal Tort Claim Act situation.

How would the elements differ under this law, the other law which would cover those planes that have more than 20 passengers, and the debris that falls on the people in Yankee Stadium?

Mr. HVASS. Let me take that, if I might, in a variety of stages. The liability on a Boeing or a Lockheed or a McDonnell Douglas would be whatever the State law was because they are not covered by this bill. So they are going to be governed by one set of rules, and I have been involved in cases, for example, where Boeing was a defendant.

We would have a different set of rules under this bill for the manufacturer of the general aviation plane. Assuming that both manufacturers were at fault—they had done something wrong either having to do with visibility or radar return or whatever it is. We will just make that assumption.

They could be exempt under this bill under the 20-year provision or the intended use because you are not intended to crash these airplanes, something I talked about it earlier. There is a different element in this bill if there is a claim—for example, somebody's husband is killed while he is a passenger in a general aviation plane. It would be covered by this act.

If somebody's spouse was killed in the Boeing airliner or the McDonnell Douglas airliner, they would not be covered by this act. The spectators in Yankee Stadium are not covered by this act, at least as I read it, again, with respect to the language because it says if you are bringing a claim as a result of somebody being on the airplane.

We would end up with a royal mess with respect to who is responsible where, and the only people that would benefit from this bill in that situation are the general aviation manufacturers. Nobody else gets any benefit from the bill and, in effect, the burden is laid off onto the other parties in that case because of the legislation contained here.

So for each person, you have to answer a number of questions. Who can they sue and what is their liability? This bill would create an absolute mess with respect to that, Senator.

Senator HEFLIN. Do you want to respond to that, Mr. Martin?

Mr. MARTIN. I could not disagree with Mr. Hvass more. This bill will not affect the rights of the people on board the airliner. So it is not going to complicate their rights at all.

This bill will not affect the rights of the people on the ground because they are specifically excluded and they will have the same claims for relief against either the airliner or the general aviation airplane or air traffic controller, or whoever else caused that accident.

The people on board the general aviation airplane will be controlled by this act. Now, that does not create a mess. It does not create any different mess than we have at the courthouse in a complex situation like that under present law because these airplanes travel in interstate commerce almost entirely.

You do not fly a Boeing airplane, a 727, from one side of New York City over Yankee Stadium to the other side. It came in from out of State, and so, in all likelihood, did the general aviation airplane.

The rights of the people on board those airplanes are affected by the State laws now by which they are governed where they boarded that airplane or where the airplane is based.

If anything, this act will simplify the problem because all of the general aviation rights and all of those passengers will be subject to one law, not perhaps the law of four or five different States, which is what we run into now. It is not going to make the situation, complex as it is, as you gave it, more complex. It will be less complex, and it is not going to hurt anybody's rights.

Senator HEFLIN. Now, he mentioned implied warranty. Do you feel that it does not abolish implied warranty actions under the Uniform Commercial Code?

Mr. MARTIN. I believe that it does not abolish implied warranty, and if you read the preemption section carefully, I believe I am right; I submit to you that I am. It only supersedes State law in an area in which this act provides a different legal basis.

This act is silent on implied warranty, but that is not really the end of the question. Section 402(a), or strict liability in tort, which is preserved in this bill, unlike a lot of other bills, and is quite generous in its allowance of recovery, is really——

Senator HEFLIN. I do not remember right now. Section 402 is limited to which, now?

Mr. MARTIN. Section 402(a) says, in substance, that any manufacturer——

Senator HEFLIN. I understand section 402, but I am talking about it is negligence on part of it and then there is strict liability. What is covered under this bill under section 402(a)?

Mr. MARTIN. The strict liability in tort is preserved in this bill in its original form, as expressed in section 402(a). In fact, the language is taken from section 402(a). Now, the point that I want to make to you, Mr. Chairman, and what I am afraid Mr. Hvass is overlooking, is that section 402(a) was adopted and recommended by the restatement of torts as an addition or substitute for implied warranty because implied warranty gives some limitations on recovery that section 402(a) does away with.

But, basically, the original foundation for section 402(a) was implied warranty, and section 402(a) does not do away with implied warranty and neither does this act. Furthermore, implied warranty is not a valuable tool in the hands of the plaintiffs' lawyers anyway. They do not use it. Why should they when they have strict liability in tort?

But I am not the least unwilling to state for the record that there was no intention to do away with implied warranty, and implied warranty is not mentioned in this bill as being superseded. If someone wants to sue under implied warranty, they are perfectly welcome to do so, but that is not going to affect—this act will not affect their right to do so.

Senator HEFLIN. Do you want a rebuttal? We can argue back and forth.

Mr. HVASS. You will look long and hard for the language of this strict liability section in the publications of the American Law Institute dealing with section 402(a) because they are not there.

We do not find things such as "engineering and manufacturing practices which were reasonably feasible." We see things like "foreseeable use," not "intended use." In addition, with respect to strict liability versus implied warranty, I just reviewed a case dealing with a new Bonanza that had its gear collapse on landing. It was an unusual situation.

But my remedy there—the best remedy I have got is the implied warranty provisions of the Uniform Commercial Code, and one of the problems I have with this bill is that the way it is drafted, if Mr. Martin thinks it saves implied warranty—and the way I read

it and, as I understand it, the way the Consumers Union people read it also, we think it does away with implied warranty.

If the bill has those kinds of problems, then those language difficulties should be ironed out. We should not have to rely on legislative history to go back and interpret what this bill was intended to say, and that is a problem with this bill.

Senator HEFLIN. Well, thank you. We appreciate your testimony. There will probably be written questions submitted and, if so, we would appreciate the expeditious return of the questions.

They tell me that we lose jurisdiction of this on the 30th, so any of the written questions, let them be submitted immediately and try to get them back Wednesday or Thursday of next week.

Thank you very much. The hearing is adjourned.

[Whereupon, the hearing was adjourned.]

APPENDIX

ADDITIONAL SUBMISSIONS FOR THE RECORD

Conference of Chief Justices

PRESIDENT
C.C. Torbert, Jr.
Chief Justice
Supreme Court of Alabama
Post Office Box 218
Montgomery, Alabama 36101
(205) 261-4599

Secretariat
National Center for State Courts
300 Newport Avenue
Williamsburg, Virginia 23187-8798
(804) 253-2000

June 23, 1988

Honorable Howell T. Heflin
Chairman, Subcommittee on Courts
and Administrative Practice
Committee on the Judiciary
SH-223 Hart Senate Office Building
Washington, D.C. 20510

Re: S. 473 - General Aviation Liability Act

Dear Mr. Chairman:

The Conference of Chief Justices has long had a policy opposing "broad federal preemption of the tort law of the states". Under this policy we have opposed a series of bills that would set federal standards for most product liability claims. However, we have not specifically addressed the similar but somewhat different issues raised by S. 473, the General Aviation Accident Liability Standards Act of 1988.

This legislation presently is under review by our Committee on State-Federal Relations and we expect to receive a recommendation for action on it at our annual meeting in August. In the meantime we are submitting these preliminary comments in the hope they can be included in the Judiciary Committee's hearing record.

Our past opposition to federal product liability standards has not addressed the standards themselves but has centered on the jurisdictional issues raised by the failure of these bills to create federal question jurisdiction. By limiting federal jurisdiction to cases involving diversity of citizenship, the previous bills have anticipated that the federal standards would most often be applied in the courts of the states. Because the federal standards would not preempt all of state tort law, but leave much of it in place, we therefore would have a unique new mix of federal and state law for the adjudication of product liability claims in each jurisdiction.

We also have expressed the concern that state supreme courts would no longer be the final authority in interpreting the law their courts must apply in product cases. Federal standards, with or without a specific grant of federal question jurisdiction, would make the Supreme Court of the United States the court of last resort as to their meaning. Thus, the U.S. Supreme Court would have to resolve conflicts that might arise between decisions of 50 state supreme courts and the 12 federal circuit courts of appeals, each involving a peculiar mix of state and federal law.

It also has been our concern that general federal preemption of state product liablity law would necessarily disrupt the remaining tort law of the states. It would be difficult if not impossible, we believe, to maintain one set of standards for product liability claims and another for all other claims in tort.

Authors of S. 473 were aware of these concerns and sought to address them by authorizing concurrent jurisdiction with defendants having an absolute right to remove from state to federal court. Federal courts also are given jurisdiction to determine all claims arising under state law if a substantial question of fact is common to the state law claims and the federal claim, defense, or counterclaim. It follows that all, or virtually all general aviation accident cases will be tried in federal courts and that many of these cases will involve two or more defendants, one or more of whom would be tried under state law while others would be tried under the federal standards and such residual state law as might apply.

While S. 473 would apply to a relatively small number of cases it would, nonetheless, broadly preempt state tort law with consequences difficult to predict. Most of these cases, as we have noted, would be in the federal courts and involve a mix of state and federal law with the U.S. Supreme Court the final authority on the federal questions involved.

The issues raised by this legislation have yet to be reviewed by responsible representatives of either the state or federal judicial systems. Accordingly, we think it would be premature for Congress to create at this time a new federal jurisidiction, with unexplored consequences for both the state and federal courts, in an area that traditionally has been a primary responsibility of the states.

Sincerely yours,

C. C. Torbert, Jr.

Clement C. Torbert, Jr.
President

NATIONAL AIR TRANSPORTATION ASSOCIATION
4226 King Street • Alexandria, Virginia 22302 • (703) 845-9000
FAX (703) 845-8176

Founded
December 28, 1940

June 28, 1988

The Honorable Howell T. Heflin, Chairman
Subcommittee on Courts and Administrative Practice
Senate Judiciary Committee
United States Senate
SH-223 Hart Senate Office Building
Washington, DC 20510

For The Record: June 21, 1988 Subcommittee on Courts and Administrative Practice, Hearing on S. 473, The General Aviation Accident Liability Standards Act.

Dear Senator Heflin:

The National Air Transportation Association represents the interests of the nation's aviation service companies commonly called fixed base operators and on-demand air charter air transportation companies. Since NATA Members repair, sell, own and operate aircraft, they are in the unique position of being concerned with both manufacturers' and consumers' interests on the subject of product liability.

We applaud your efforts to explore the problem with this hearing on the *General Aviation Accident Liability Standards Act* and lend our full support to product liability reform. Member companies of our organization unanimously feel that a national set of standards is needed to address the rapidly rising liability costs for general aviation. Since the federal government regulates the initial design, certification, operation and maintenance of the aircraft, federal standards should be established for general aviation liability cases.

As you are probably aware, S. 473 does not cap damages or attorney's fees and does not limit the consumer from filing a liability claim. The aviation service company would benefit from the comparative responsibility provision since they would be held liable only for their actions.

During the Subcommittee's June 21st hearing on the issue, several witnesses pointed out the tremendous increases in recent years for the costs of product liability insurance. Those increases have not been limited to airframe manufacturers; our Members too have experienced significant increases in insurance premiums. Since FBOs and air charter companies typically purchase their insurance as a package (product liability, hangar-keepers liability, general liability, etc), and pay one premium for that package, it is virtually impossible to identify exactly how much the premiums for product liability insurance alone have increased. However, an Association survey indicated that 1985 to 1986 increases in NATA Members' overall insurance costs averaged 46 percent, with the highest increase reported to be 500 percent. NATA Members are indeed concerned about the cost of insurance.

NATA appreciates this opportunity to comment for the record. If you need any additional information about the FBO/air charter industry, please contact us.

Sincerely,

William H. Power
Vice President,
Government Affairs

James D. Gormley
Vice President-Government Relations

General Aviation
Manufacturers Association

Suite 801
1400 K Street, N.W.
Washington, D.C. 20005
(202) 393-1500

July 11, 1988

The Honorable Howard Metzenbaum
SH-308 Hart Building
U.S. Senate
Washington, DC 20510

Dear Senator Metzenbaum:

At the June 21 Courts Subcommittee hearing on S. 473, you voiced some questions relating to general aviation insurance premiums/payments and how we arrived at the $70,000 per aircraft product liability cost figure. We have coordinated with Eddie Correia of your staff to be as responsive as possible to your questions.

The basis for our industry product liability cost figures is a confidential study conducted by the Wyatt Company in 1986. Their summary report is enclosed per Mr. Correia's request. Also enclosed is a copy of the questionnaire Wyatt used to gather information. You will note that the industry costs derive from paid claims, including verdicts, settlements, and defense costs. Each respondent reported its company's total paid claims on an annual basis. Collectively they reflect the costs to the industry.

The quoted product liability cost of $70,000/airplane was originally derived by Beech Aircraft's product liability costs divided by their unit production. If a similar analysis was done for the entire industry in 1985 (paid claims of $210 million divided by production of 2032 aircraft), product liability costs would exceed $103,000 per aircraft, if fully allocated to the consumer.

I am also enclosing a recently-published fact sheet that contains current information about our industry and a paper that addresses the insurance issue. We hope these papers, along with our comments, are responsive to your questions.

Sincerely,

Jim Gormley

Enclosures

Product Liability Study

for

General Aviation Manufacturers Association

The following information is requested for the purpose of projecting industry-wide trends in product liability losses for the general aviation manufacturing industry, and the probable range of total industry losses in the next few years. Data will be given to GAMA and its committees on an aggregate basis only, and will not be published by individual company. Thank you for your cooperation.

As to each year, for the past ten years, if possible, we would like to secure the claim information as it was reported annually to you by your insurer, or calculated by your own staff if self-insured. This will allow us to track the degree of loss development that takes place as claims mature. An example of the type of response is enclosed.

PLEASE RETURN THIS FORM TO:

Warren G. Brockmeier
Vice President
The Wyatt Company
Suite 5600 - Sears Tower
233 South Wacker Drive
Chicago, Illinois 60606

NO LATER THAN MARCH 15, 1986

EXAMPLE

Please complete this form for each policy year as far back as information is available -- ten years if possible.

Policy Year Ending: 12/31/79

Claims As Of	No. of Claims*	Closed Claim Cost	Open Reserves	Paid Allocated Loss Expense	Total $$
6/30/80	127	$ 580,000	$3,400,000	$ 115,000	$4,095,000
6/30/81	131	1,615,000	3,210,000	340,000	5,165,000
6/30/82	132	2,120,000	2,970,000	515,000	5,605,000
6/30/83	132	2,775,000	2,450,000	725,000	5,950,000
6/30/84	132	3,460,000	1,910,000	905,000	6,275,000
6/30/85	132	4,950,000	1,480,000	1,065,000	7,495,000

Claims Paid or Reserved of $1,000,000 or More.

Date	Amount	Closed Or Open
6/03/79	$1,300,000	Closed
9/15/79	1,100,000	Open

* Two or more claimants in a single accident to be considered as one claim.

GAMA Product Liability Study

COMPANY NAME: _____

CONTACT: _____

TITLE: _____ PHONE: _____

HISTORICAL EXPOSURE DATA:

Year	Airframes (In U.S. Registered Fleet)	Airframes (Units Produced)	Engines (Units Produced)	Other (Sales)	Total (Sales)
1976					
1977					
1978					
1979					
1980					
1981					
1982					
1983					
1984					
1985					

CURRENT EXPOSURE BASE:

Aircraft in U.S. Registered Fleet (If Airframe Manufacturer)

Single Engine - Reciprocating _____
Multi-Engine - Reciprocating _____
Multi-Engine - Turbo Prop _____
Multi-Engine - Turbo Jet _____

Estimated Engines in U.S. Registered Fleet (If Engine Manufacturer)

Reciprocating _____
Turbo Prop _____
Turbo Jet _____

Does your company have a captive insurance company at this time?_____

If so, is it used or has it been used for product liability insurance?_____

Does your product liability data include claims for aircraft products other than General Aviation? _____

If so, what percentage of the claims reported do you estimate to be non-General Aviation?

	Please Check
Less Than 5%	/__/
5% To 20%	/__/
20% To 50%	/__/
50% To 80%	/__/
80% To 95%	/__/
95% To 100%	/__/

Please complete this form for each policy year as far back as information is available — ten years if possible.

Policy Year Ending: _____

Claims As Of	No. of Claims*	Closed Claim Cost	Open Reserves	Paid Allocated Loss Expense	Total $$

Claims Paid or Reserved of $1,000,000 or More.

Date	Amount	Closed Or Open

* Two or more claimants in a single accident to be considered as one claim.

THE Wyatt COMPANY

ACTUARIES AND CONSULTANTS

EMPLOYEE BENEFITS
COMPENSATION PROGRAMS
EMPLOYEE COMMUNICATIONS
ADMINISTRATIVE SYSTEMS
RISK MANAGEMENT
INTERNATIONAL SERVICES

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233 SOUTH WACKER DRIVE
CHICAGO, ILLINOIS 60606

(312) 876-2000
TELEX 270331

OFFICES IN PRINCIPAL CITIES
AROUND THE WORLD

June 16, 1986

To: Edward W. Stimpson
General Aviation Manufacturers Association

Re: Product Liability - Paid Claims

We are sending some exhibits illustrating the trends in actual payment of product liability claims by GAMA members. This is based on data secured from the questionnaire of those companies who supplied data as to claim payments by year. Those companies comprised 94% of the airframe manufacturing capacity, 52% of the engine and props, and 87% of those component manufacturers participating in our survey. A slight adjustment should be made for those not reporting, about a 13.3% increase in totals, but we would rather that these be fully supportable numbers with minimal adjustment required.

The data have been adjusted to include claims paid for accidents in years prior to 1976, based on assumptions as to incurred losses and payout patterns for those years. This was done in order to fully reflect paid claims during the earliest years of the period under review. The data for 1985 is somewhat incomplete--the totals will end up being higher than those shown.

There were a couple of large claims that we could not pin down as to exact payment date--we could establish that they were paid somewhere between June 30 of one year and June 30 of the following year. We split them between the two calendar years, which is why some large claim data shows totals under one million, even though a large claim is defined as one involving an award or settlement in excess of one million dollars.

The charts which follow speak for themselves. Some comments, however, are in order.

1. The total product liability claims paid in the two years 1982 and 1983 combined were more than those paid in the preceding four years (1978 through 1981).

2. The total product liability claims paid in the two years 1984 and 1985 together was more than twice the total for the preceding two years (1982 and 1983), and about 36% more than the total paid during the preceding 6 years (1978 through 1983 inclusive). We would estimate that the total paid claims during those two years, 1984 and 1985, was equal to the total paid in the preceding ten years (1974 through 1983 inclusive).

3. The amount of total claim payments consisting of awards or settlements in excess of one million dollars, or defense costs in connection with such claims, rose from 4.6% of all claim payments during the period 1978-1981, to 14.8% during the period 1982-1983, to 29.3% during the period 1984-1985. This means that, unless tort reform is legislated, including abolition of the joint and several liability concept that leads the plaintiff's attorney to the defendant with the deepest pocket, an increasing percentage of all payments made by manufacturers will end up in the pockets of a small group of plaintiffs and their attorneys.

4. All of these trends run contrary to the trends in air safety, which show a reduction in fatal accidents or those with serious injuries, at the same time that this increase in claim payments has taken place.

If we can supply further information to you, please call.

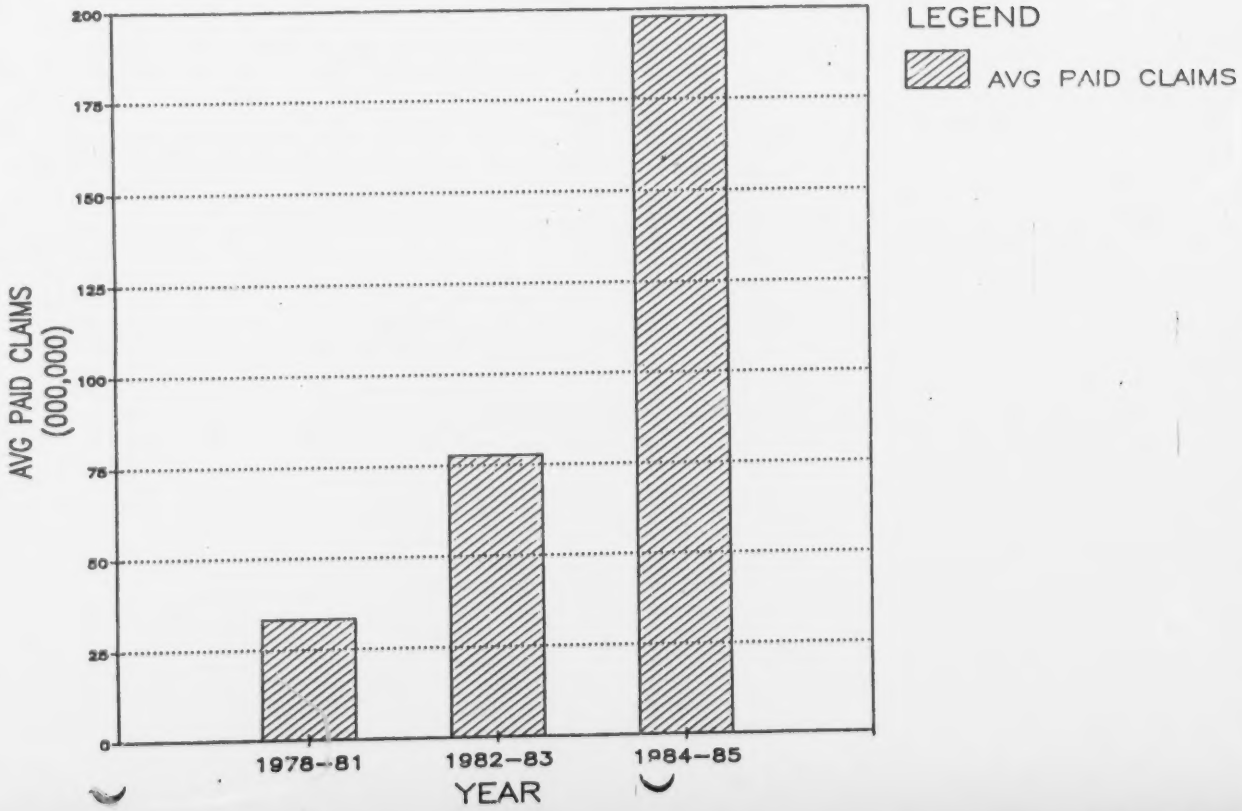
Sincerely yours,

Warren G. Brockmeier

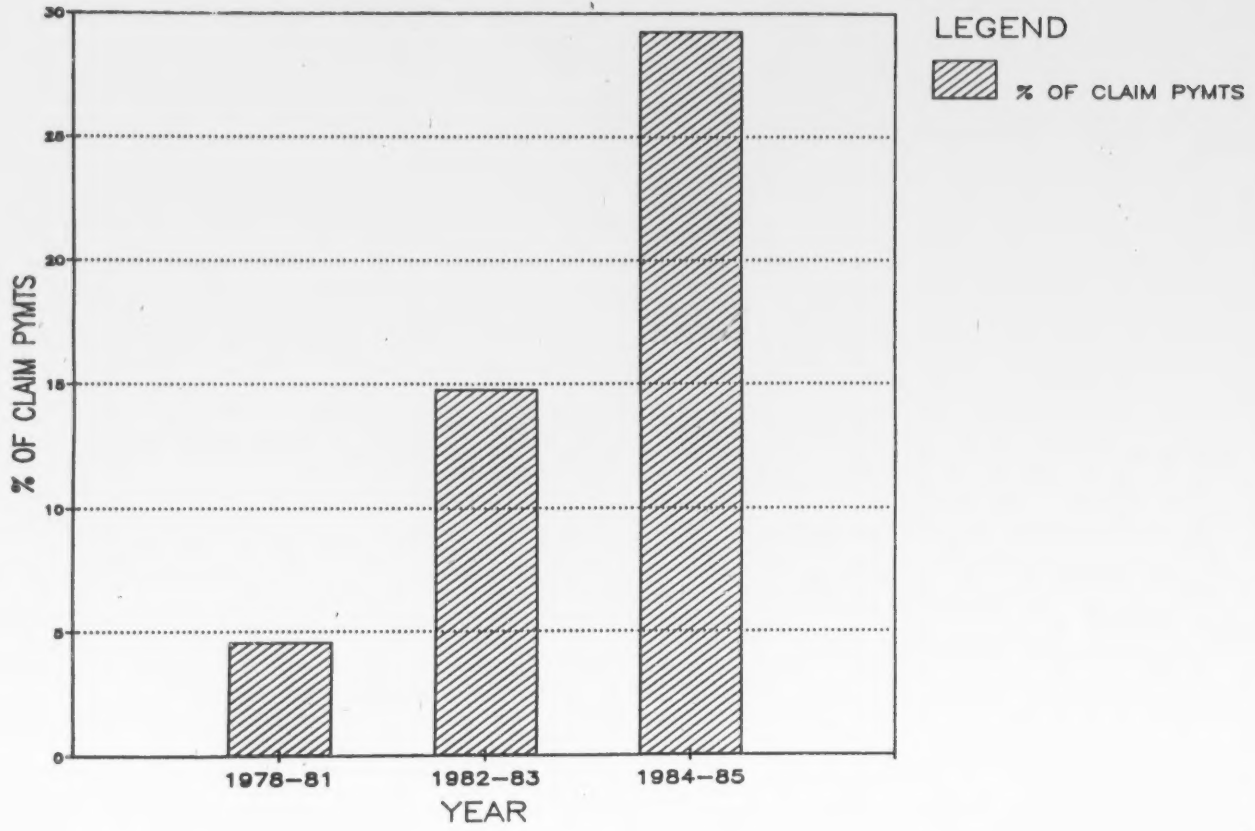
Warren G. Brockmeier, CPCU
Vice President

WGB:mf
Enclosure

AVERAGE ANNUAL PAID CLAIMS FOR GAMA

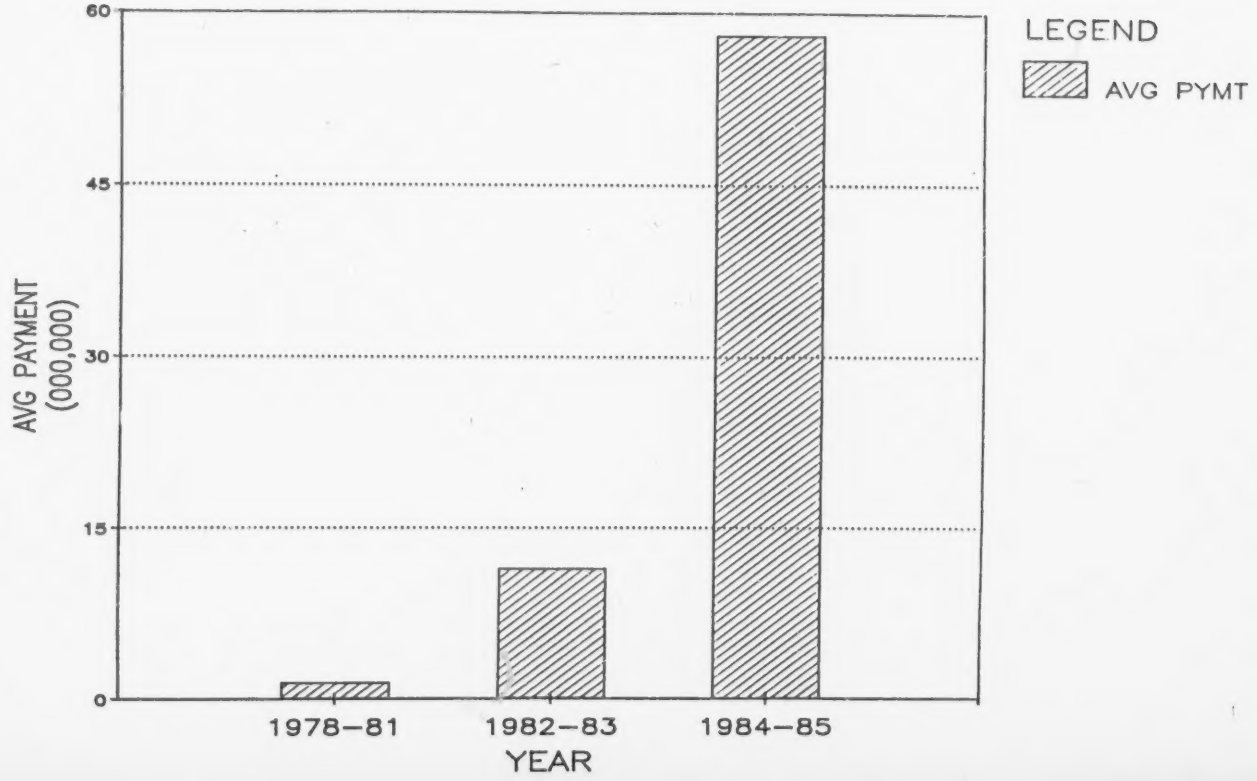


PERCENTAGE OF ALL CLAIM PAYMENTS REPRESENTED BY LARGE AWARDS

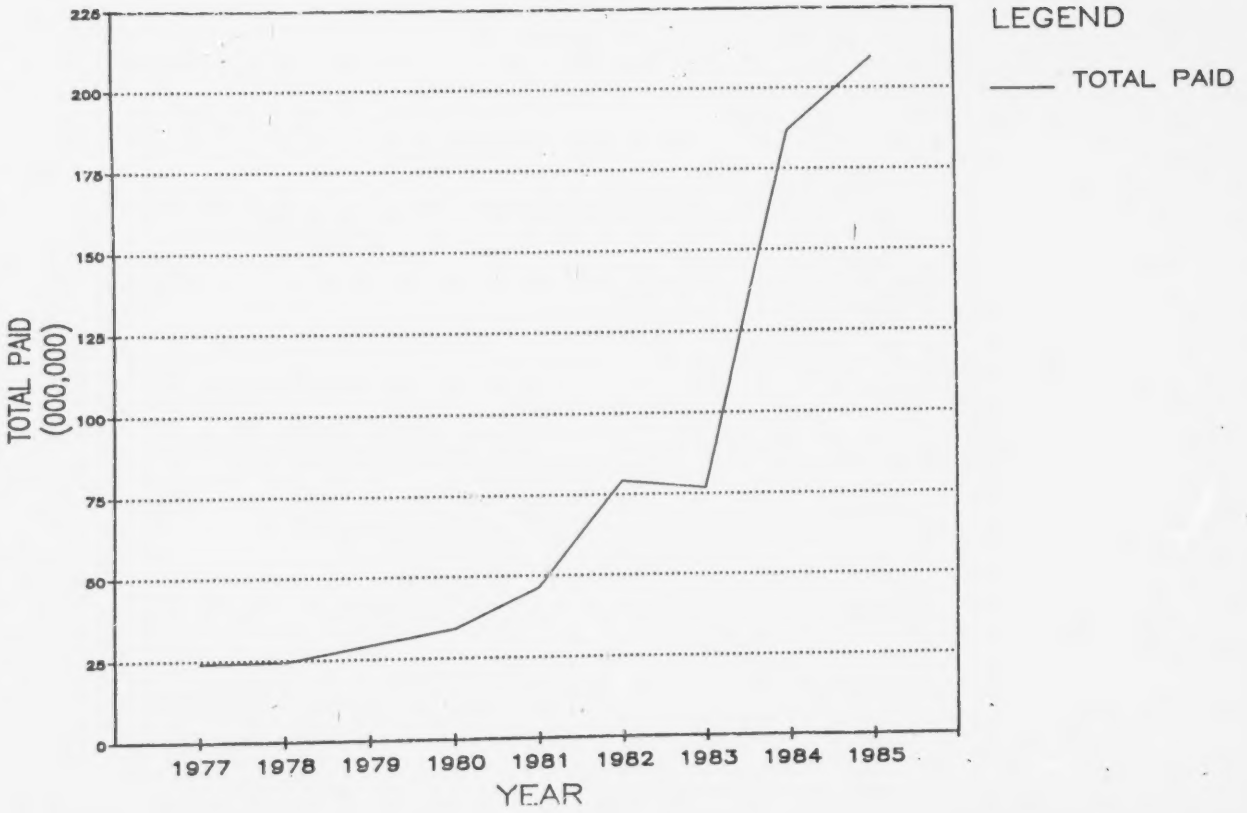


AVERAGE ANNUAL PAYMENT OF LARGE AWARDS & SETTLEMENTS

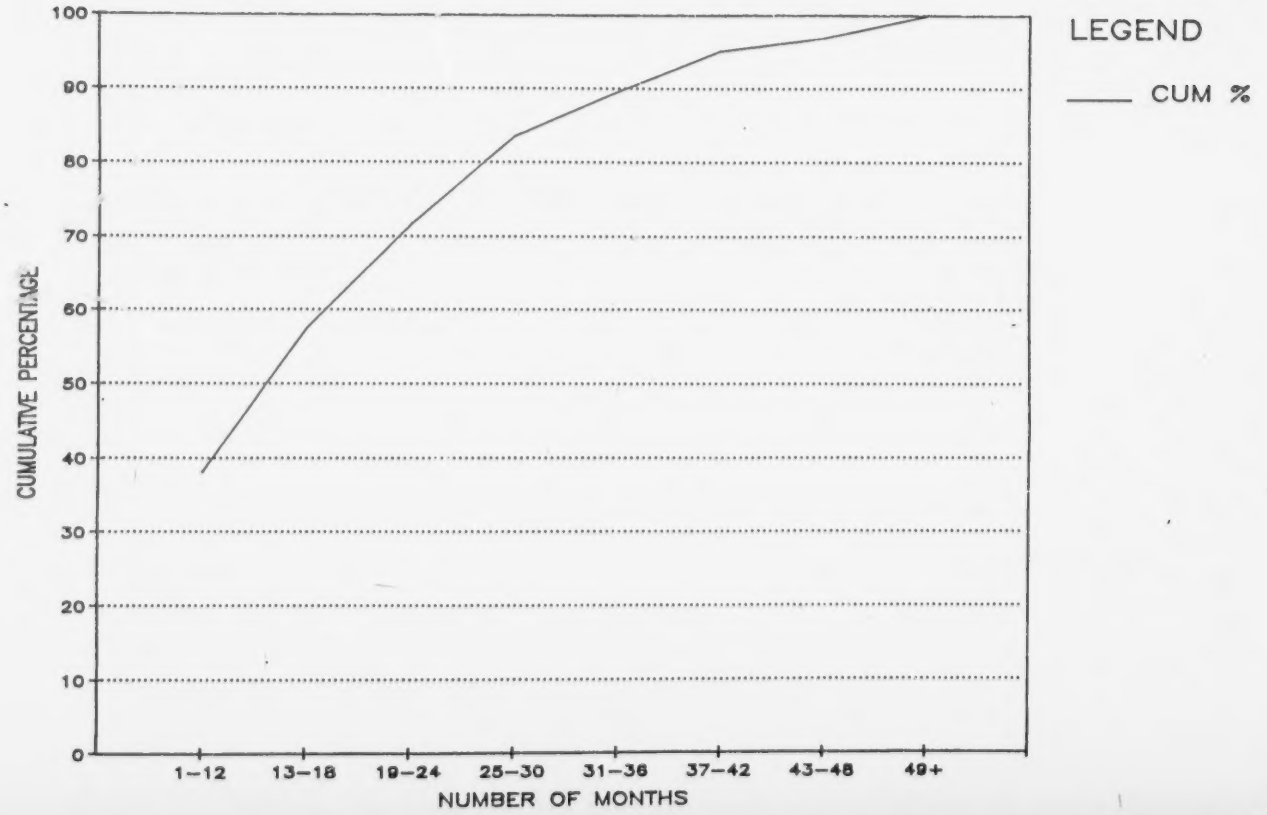
(>1MM)



SUMMARY OF DATA ON GAMA PAID CLAIMS



PATTERN OF CLAIM REPORTING BY MONTHS AFTER POLICY INCEPTION



SUMMARY OF DATA ON GAMA PAID CLAIMS

YEAR	TOTAL PAID (000)	LARGE CLAIMS (000)	PCT LG CLMS
1977	24228	0	0.0
1978	24570	785	3.2
1979	29446	2509	8.5
1980	34197	606	1.8
1981	46598	2264	4.9
1982	79304	9923	12.5
1983	76866	13183	17.2
1984	186866	68407	36.6
1985	209658	47776	22.8

SUMMARY OF DATA ON GAMA PAID CLAIMS
SUMMARY BY LARGER TIME PERIODS

PERIOD	TOTAL PAID (000)	LARGE CLAIMS (000)	PCT LG CLMS
1978-81	134811	6164	4.6
1982-83	156170	23106	14.8
1984-85	396524	116183	29.3

AVERAGE LARGE CLAIM (EXCESS OF $1 MILLION)

1978-83	1582
1984-85	3183

PATTERN OF CLAIM REPORTING BY MONTHS AFTER POLICY INCEPTION

SUMMARY- AIRFRAME MANUFACTURERS

MONTHS	NUMBER	PCT	CUMULATIVE NUMBER	CUMULATIVE PERCENTAGE
1-12	355	32.1	355	32.1
13-18	201	18.2	556	50.3
19-24	171	15.5	726	65.8
25-30	161	14.6	887	80.3
31-36	83	7.5	970	87.8
37-42	75	6.8	1045	94.6
43-48	23	2.0	1067	96.7
49 PLUS	37	3.3	1104	100.0
TOTAL	1104	100.0		

SUMMARY- ENGINES, PROPS, & COMPONENTS

MONTHS	NUMBER	PCT		
1-12	238	53.1	238	53.1
13-18	99	22.0	337	75.1
19-24	49	10.9	385	86.0
25-30	24	5.3	409	91.3
31-36	13	2.8	422	94.1
37-42	11	2.4	432	96.4
43-48	6	1.3	438	97.7
49 PLUS	10	2.3	448	100.0
TOTAL	448	100.0		

SUMMARY- ALL MEMBERS

MONTHS	NUMBER	PCT		
1-12	593	38.2	593	38.2
13-18	299	19.3	892	57.5
19-24	220	14.1	1112	71.6
25-30	184	11.9	1296	83.5
31-36	95	6.1	1391	89.6
37-42	86	5.5	1477	95.2
43-48	28	1.8	1505	97.0
49 PLUS	47	3.0	1552	100.0
TOTAL	1552	100.0		